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245 00 Export implement age $ban independent journal devoted exclusively to the export trade in agricultural machinery, pumps, wind mills, farm tools and supplies

260 Philadelphia, PA $bNolan Publishing Co. $c[1899]-1907

300 15 v. $bill. $c35 cm.

310 Monthly

362 0 [Vol. 1 (Sept. 1899)]-v. 15, no. 5 (Feb. 1907)

500 Subtitle varies

500 Text in English, Spanish, German and French

533 Microfilm $mv.3,no.1 (1900)-v.4,no.1 (1901),v.4,no.3 (1901)-v.4,no.6 (1901),v.5,no.2 (1901)-v.6,no.1 (1902),v.6,no.3 (1902)-v.15,no.5 (1907) $bUniversity Park, Pa. : $cPennsylvania State University $d1998 $e4 microfilm reels ; 35 mm. $f(USAIN state and local literature preservation project. Pennsylvania) $f(Pennsylvania agricultural literature on microfilm)

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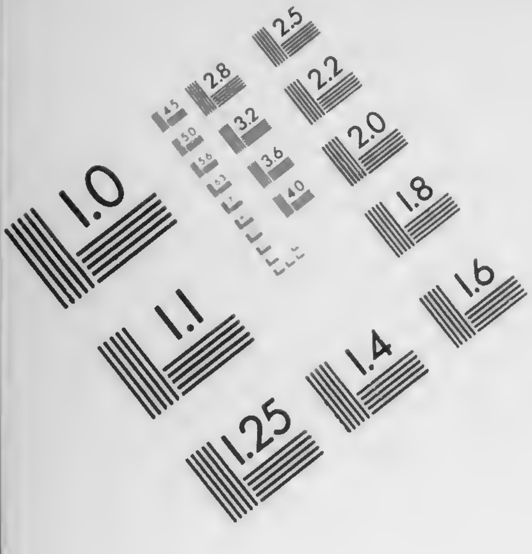

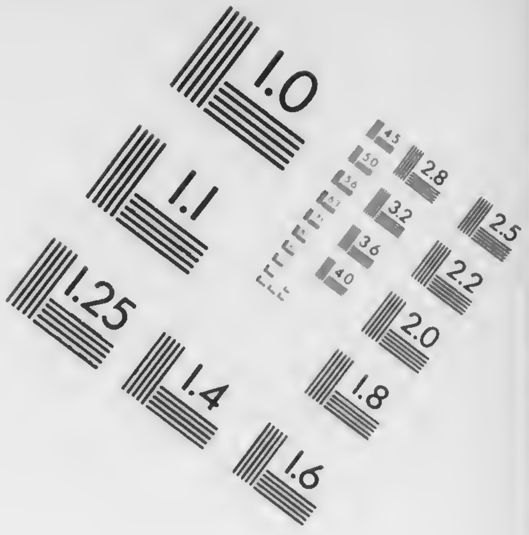

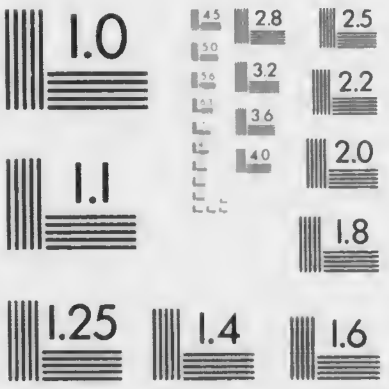

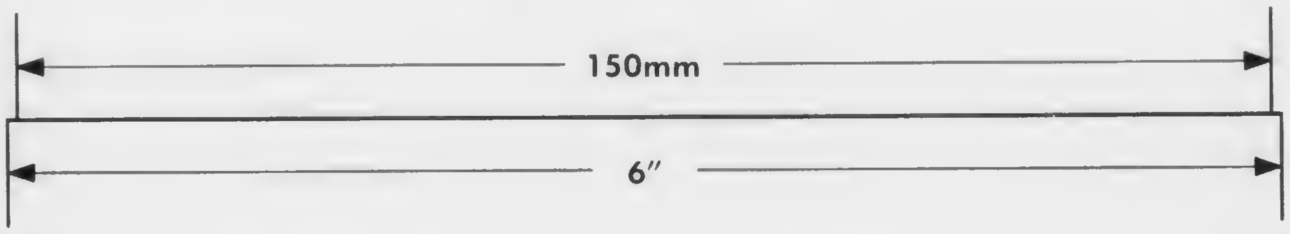

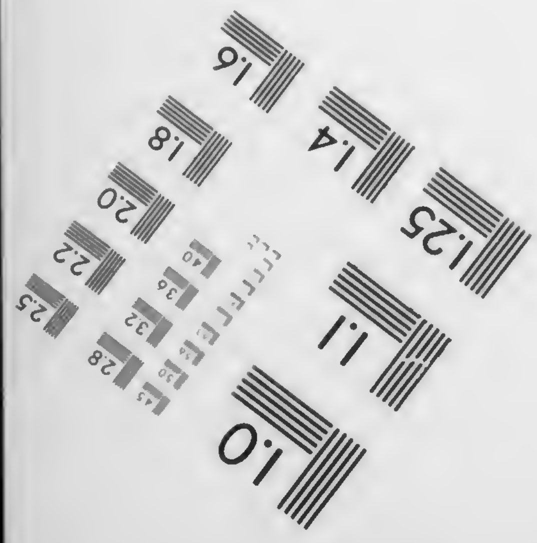

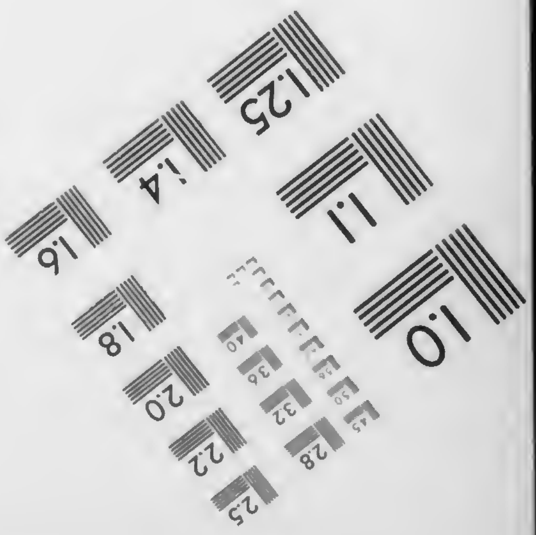

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Volume 3
1900/1901

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Vol. III. No. [illegible] INV. '60 OCTOBER, 1900.

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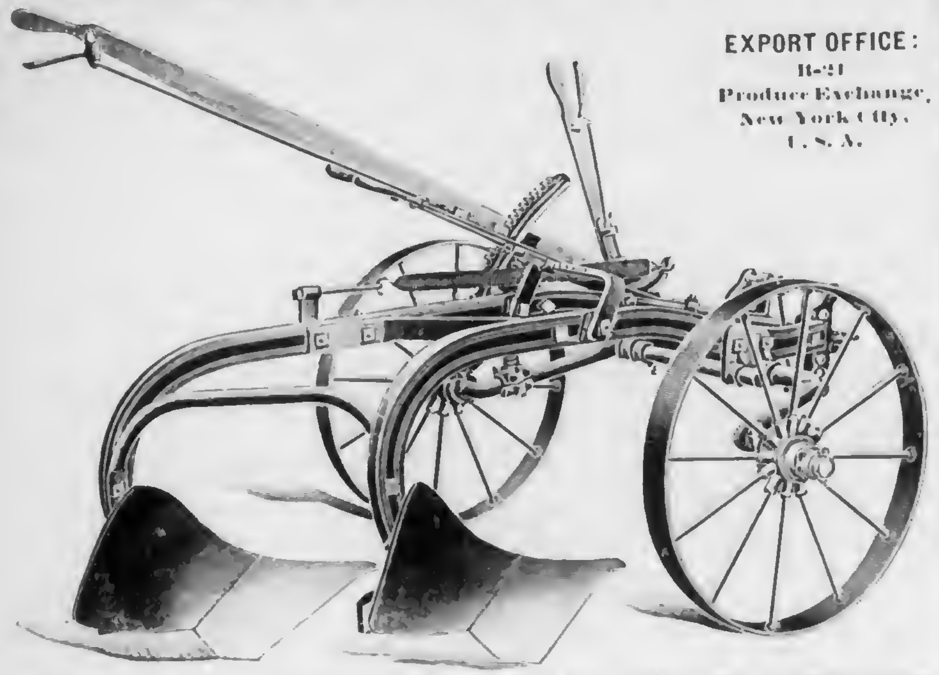
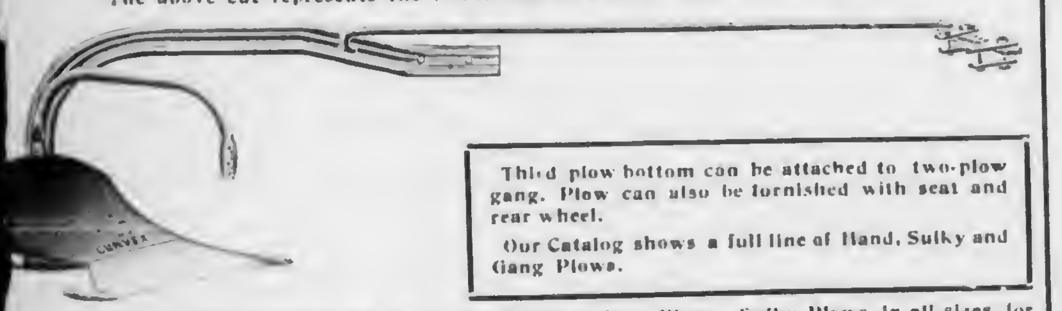


The above cut represents the IMPERIAL CONVEX WALKING GANG, Moldboard View.



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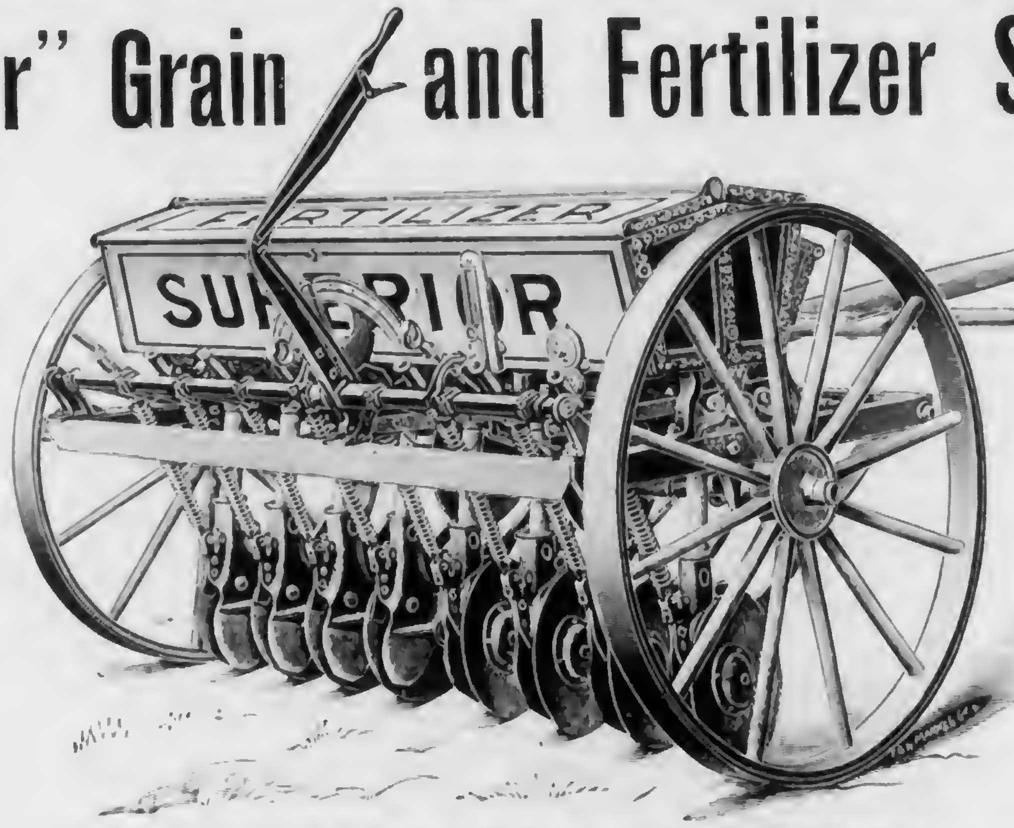

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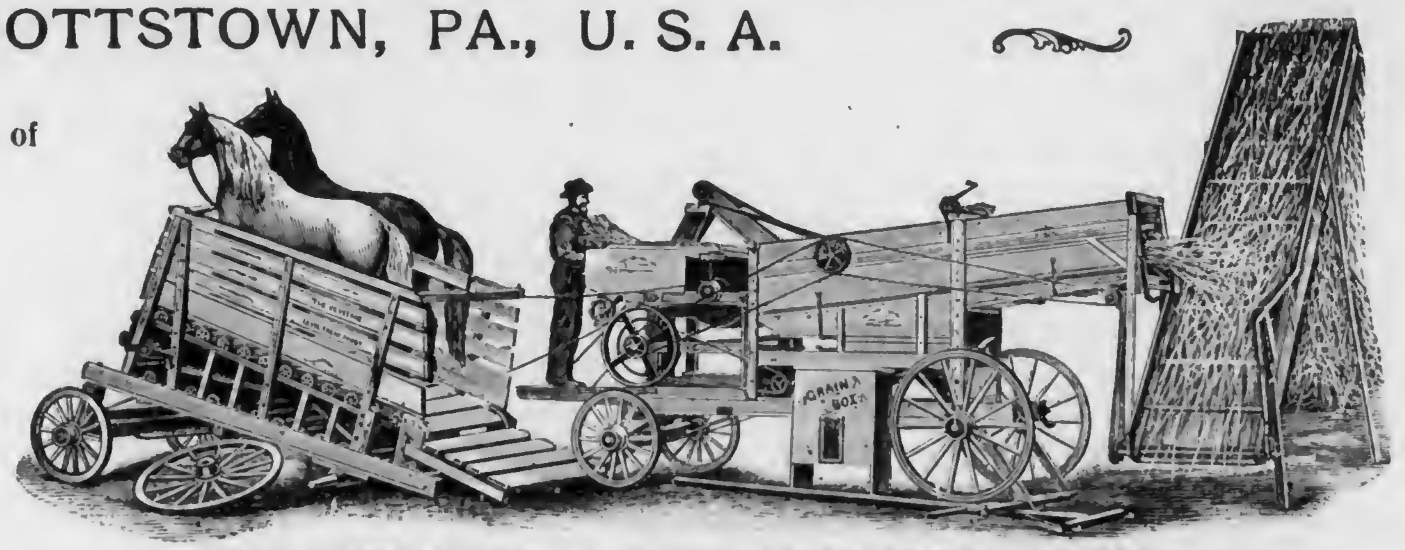

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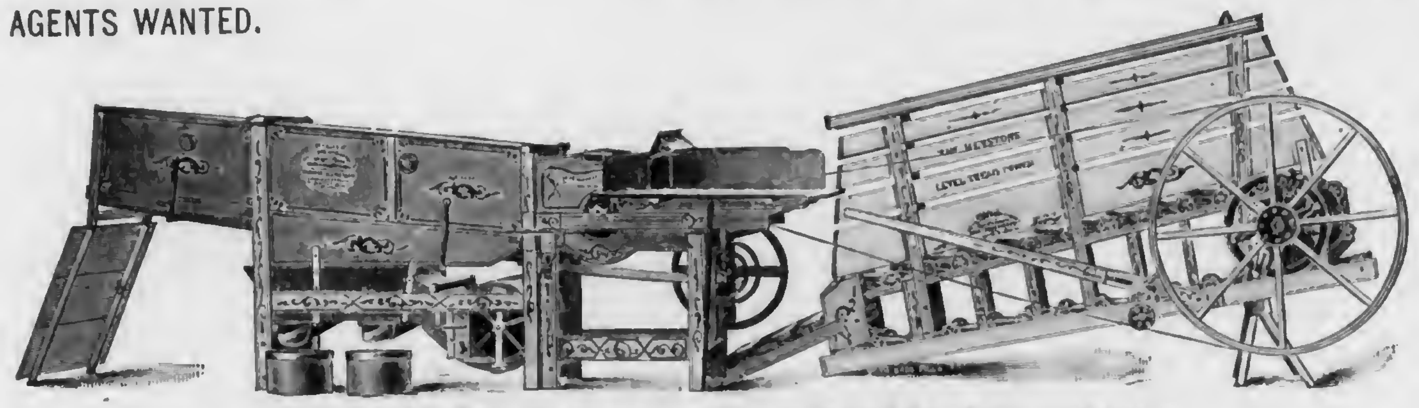

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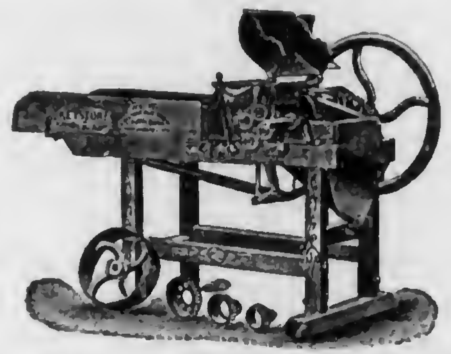

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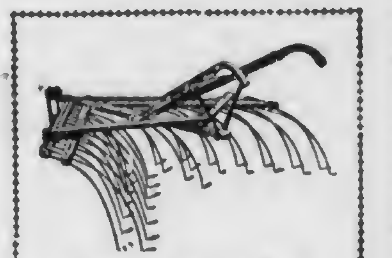

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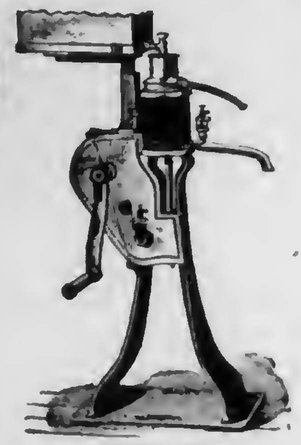
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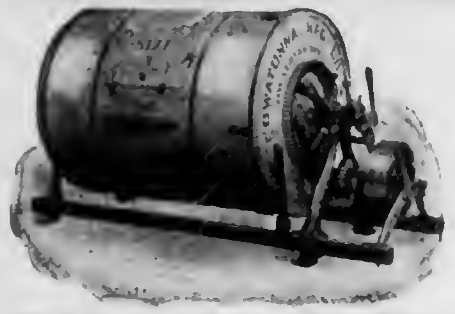
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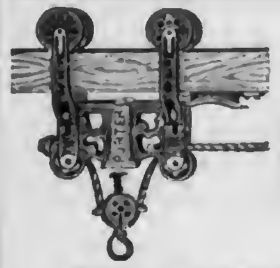

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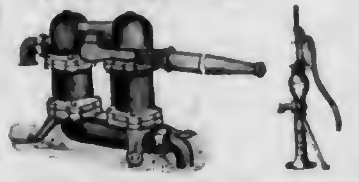

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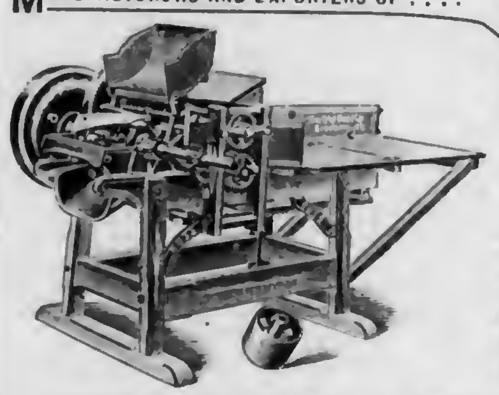

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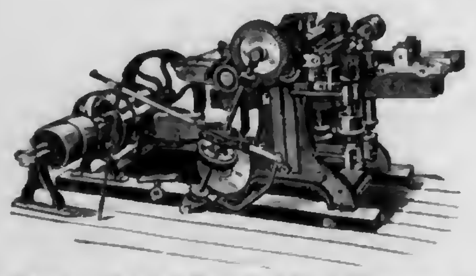

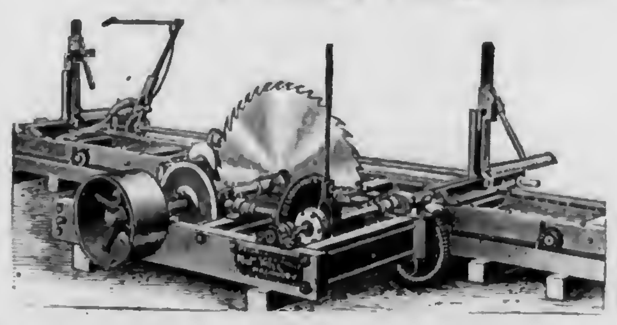

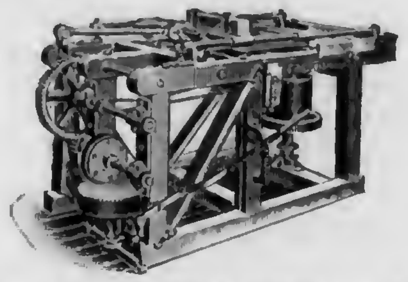

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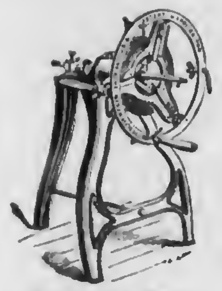
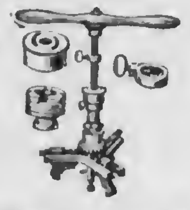
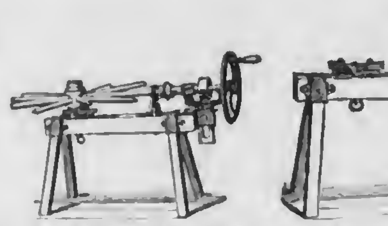

Silver's New Taper Hub Boring Machine. Hand power.


Silver's Hub Boxing Machine for light or heavy work.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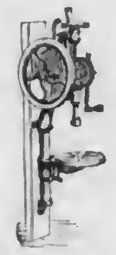
No. 12 Advance Hand Drill. Three sizes. Two speeds. Self feed.

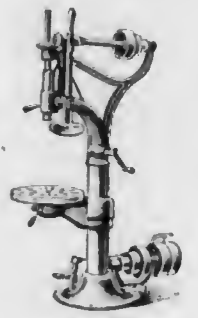
Fig. 850.
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Round or square base.

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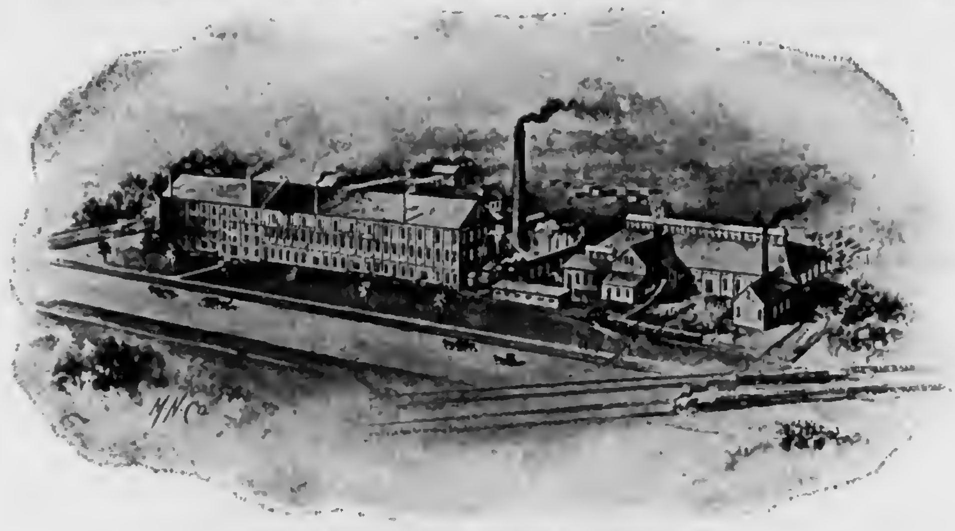
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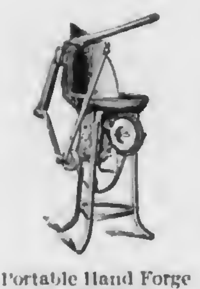
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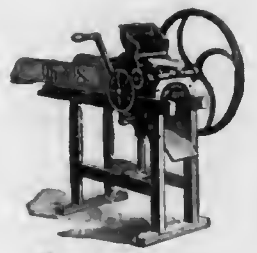
Fig. 779.
Nos. 8½ and 10½, "Ohio" Hand Feed Cutter.

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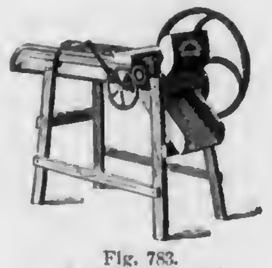
Fig. 783.
No. 11½, "Pony" Hand Feed Cutter.

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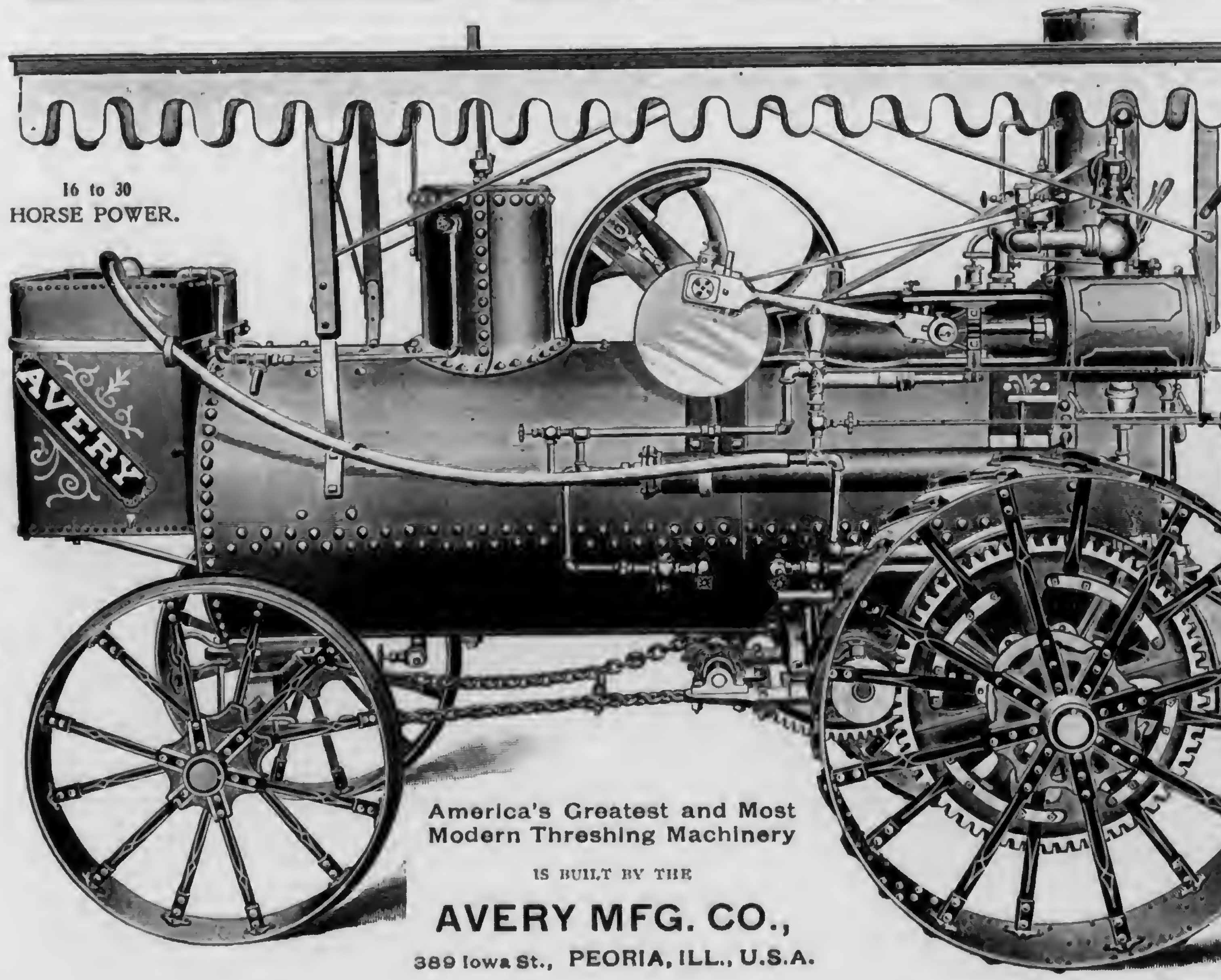
16 to 30
HORSE POWER.



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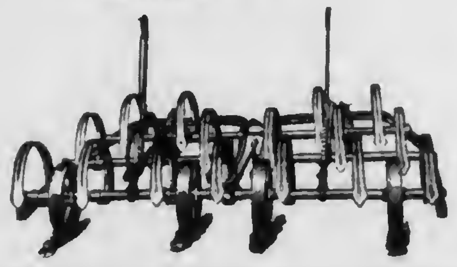

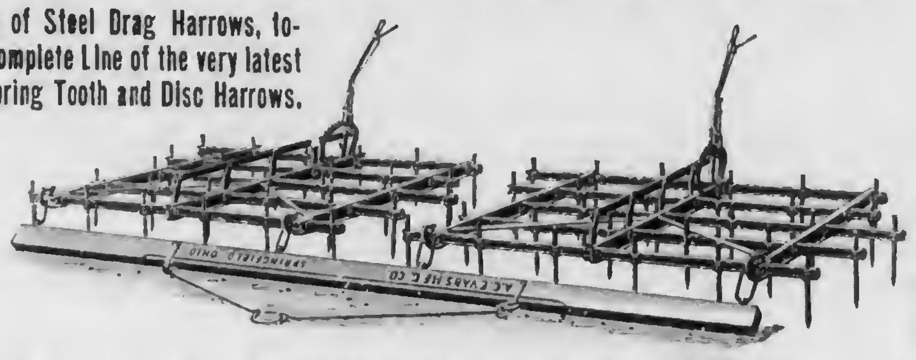

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Pferderechen mit Fahrsitz,
Hand-Reihen-Säemaschinen,
Etc., Etc.

Alleinverkauf der Morgan Patent Löffeleggen nach dem Auslande.

Errichtet
1804
—
Inkorporiert
1876

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WIARD

Established 1804.
Incorporated 1876.

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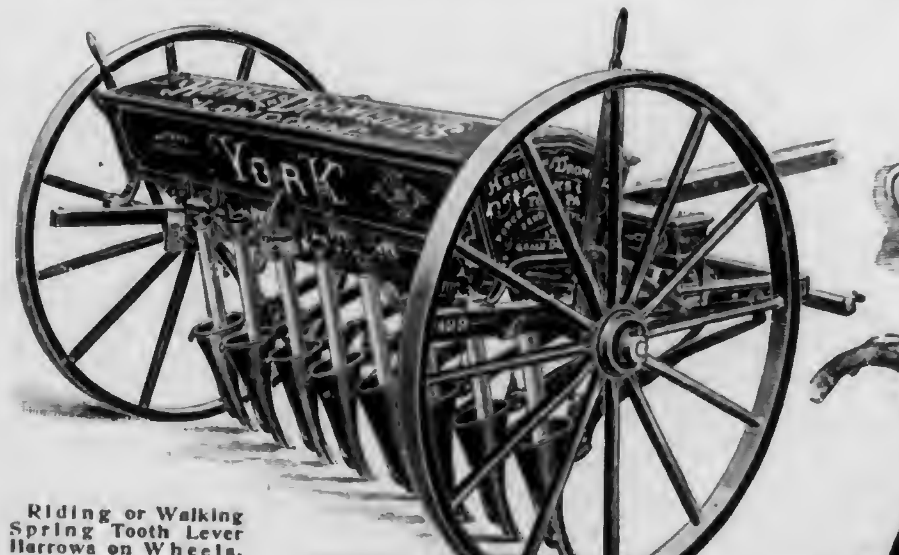

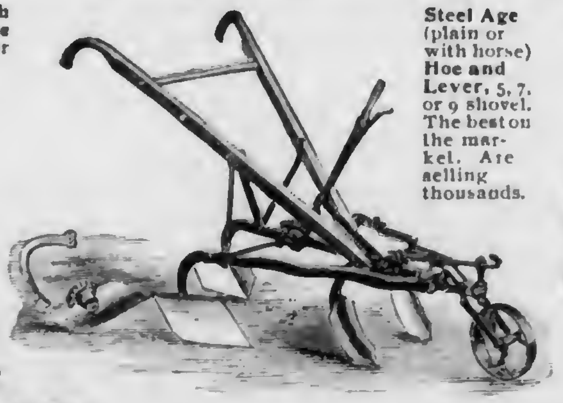

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AND
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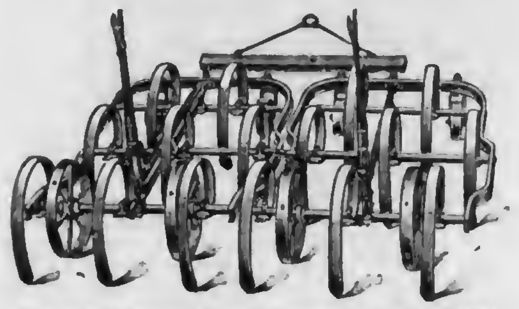
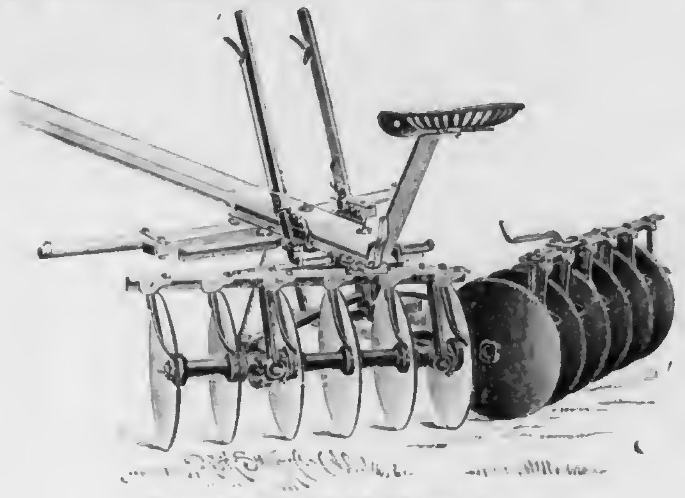
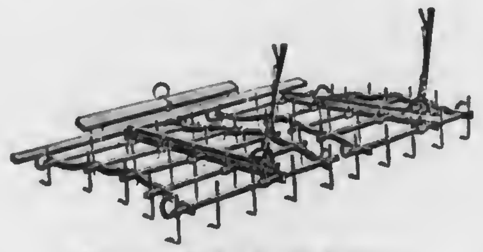


Standard Spring Tooth Harrow, with Wheels.



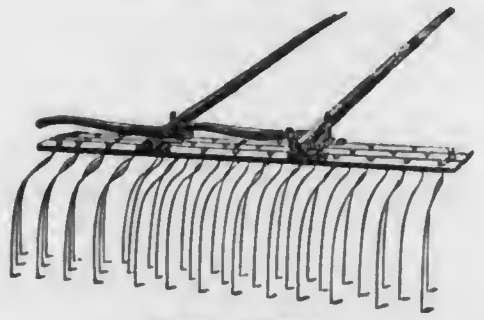
Standard Model B Disc Harrow

Standard One-Horse Harrow.

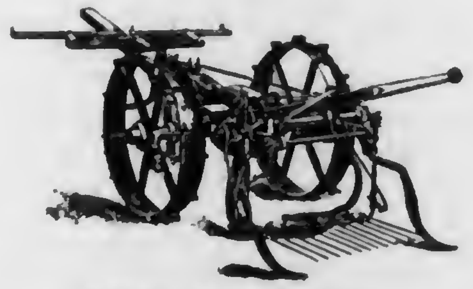


Standard Spike Tooth Harrow.

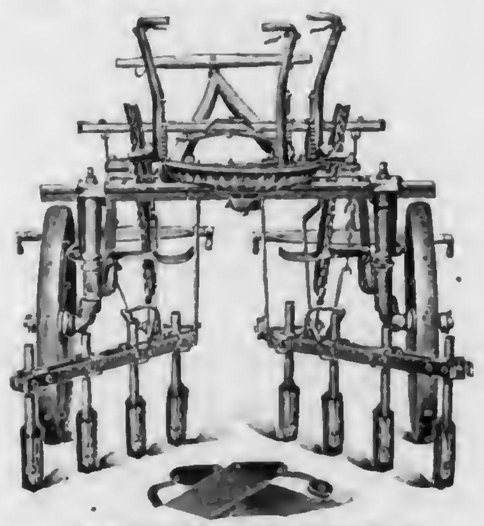
Spring Tooth Harrows,
Spike Tooth Harrows,
Disc Harrows,
Weeders,
Potato Harvesters,
Corn Shellers,
Corn Mills,
Eagle Plows,
Sidehill Plows,
Double-Mouldboard Plows.



Standard Weeder.



Standard Potato Harvester.



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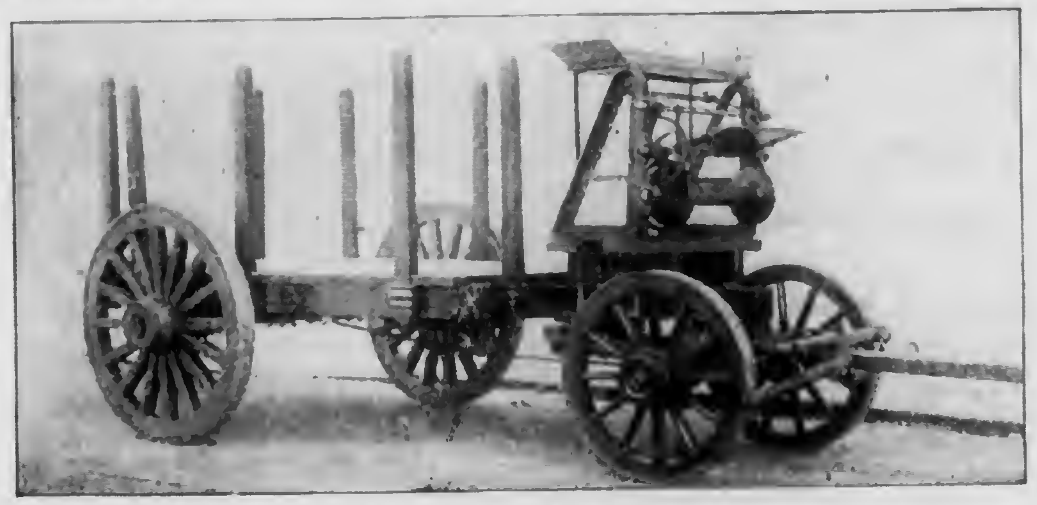

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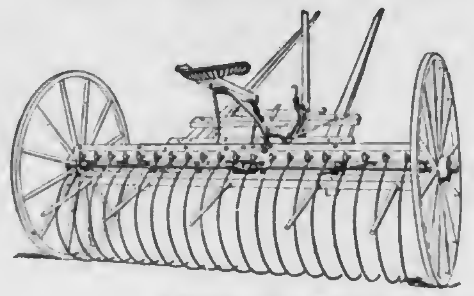

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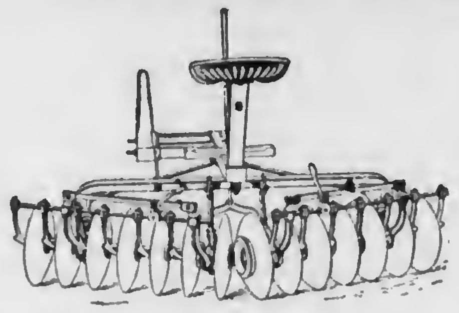
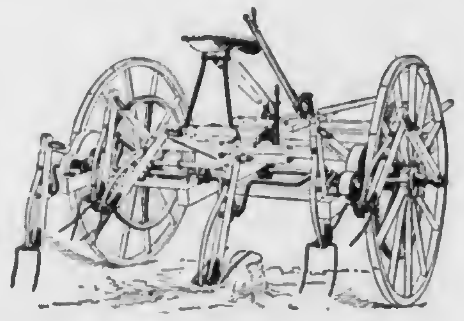


Grain-Seeder Attachment for Harrows



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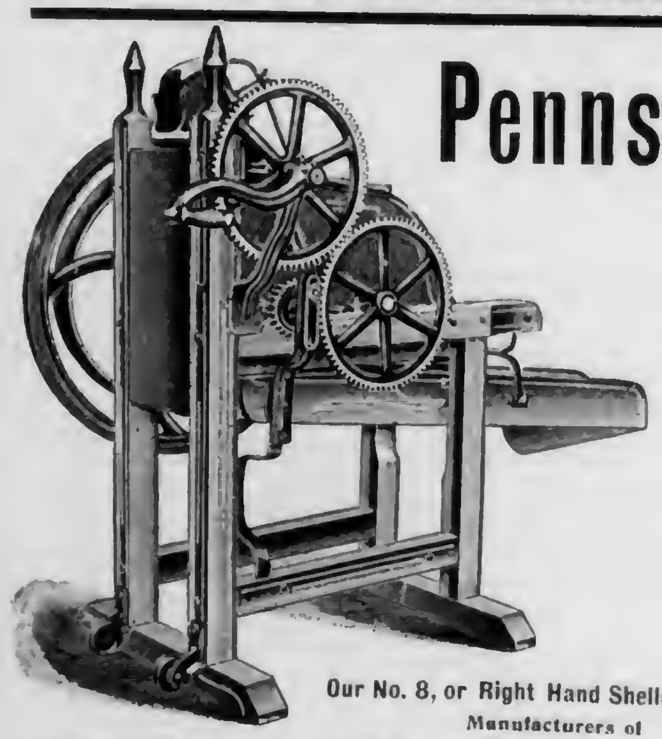
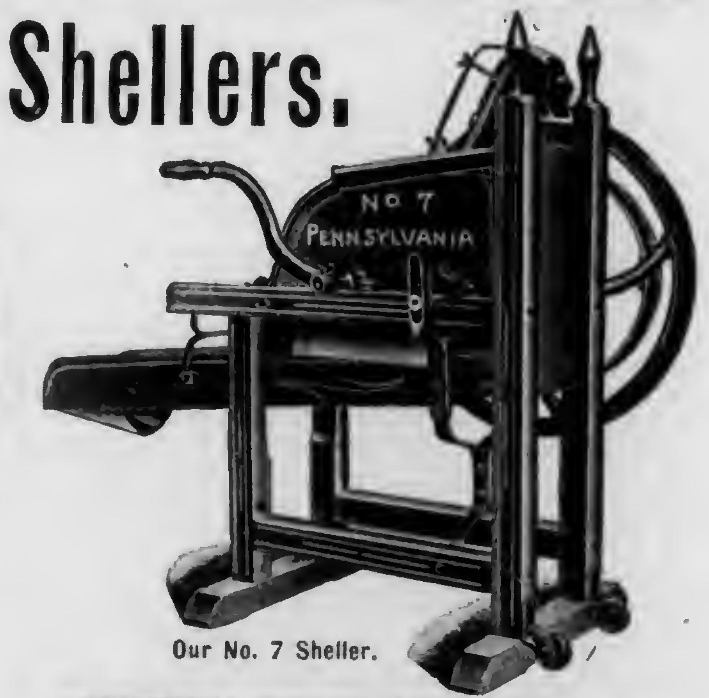


Our No. 8, or Right Hand Sheller.

Our No. 3 Single Hole, with Cob Separator and Cleaner.



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All our Rollers have our REMOVABLE CHILLED BUSHINGS.

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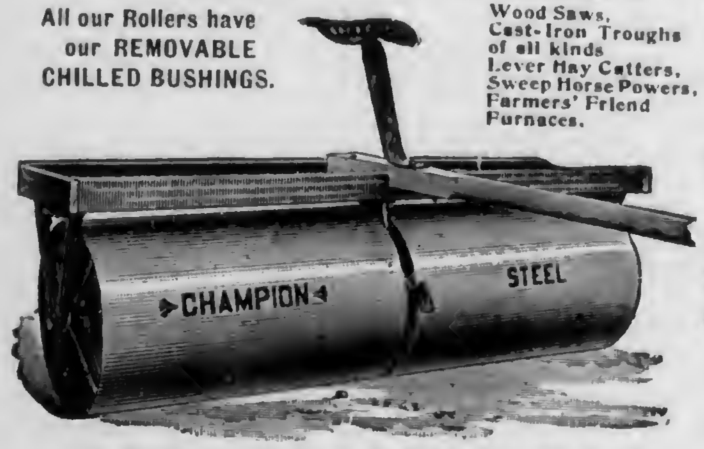

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Champion Land Rollers, 20 SIZES, are acknowledged the best, and are used all over the world.

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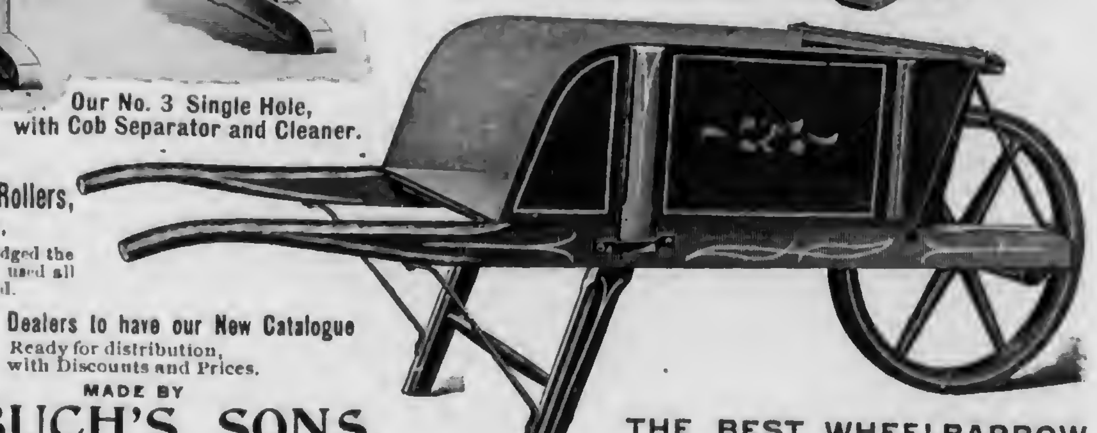

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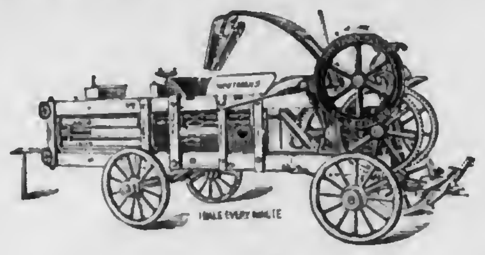

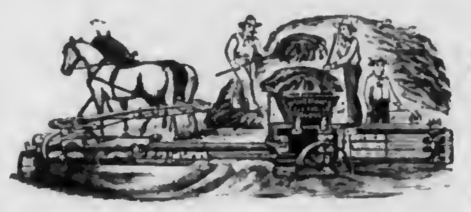

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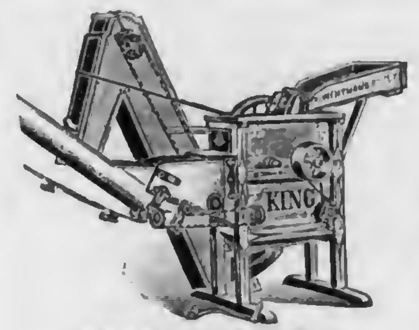
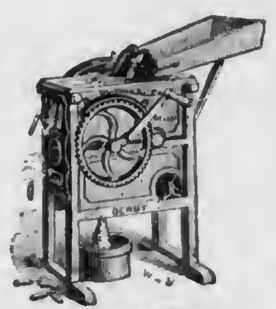
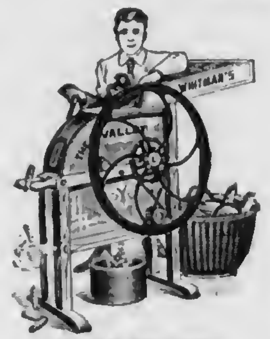


Two-hole Corn Sheller.

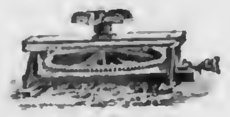


Derby Corn Sheller.

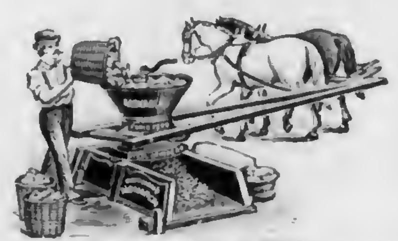


Hand Sheller.

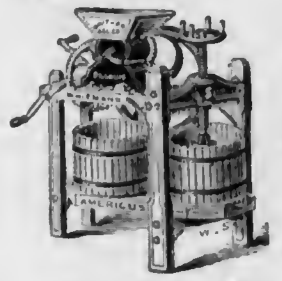
Railway Power.



Lever Power.

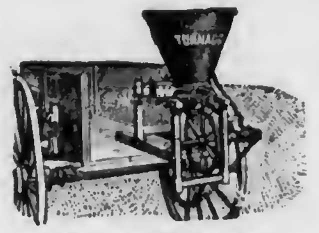


Corn and Cob Mill.



Cider and Wine Mill.

Magic Mill.



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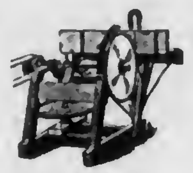
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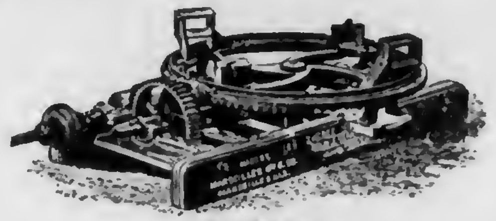
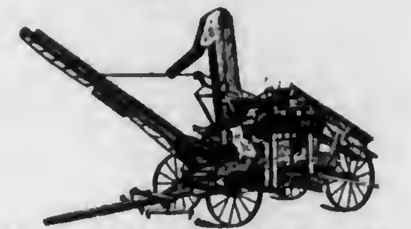

Horse-Powers.

Speed Jacks.

Feed Cutters.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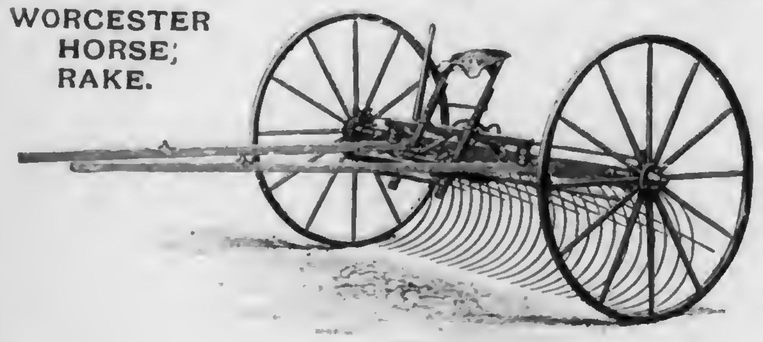

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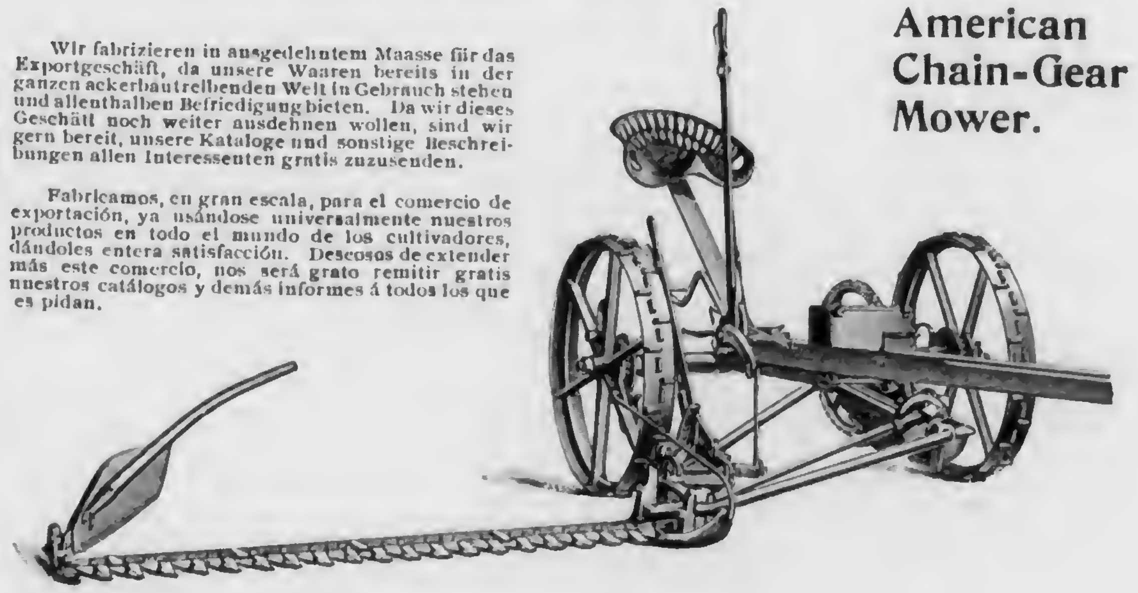

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Largely of Malleable Iron.

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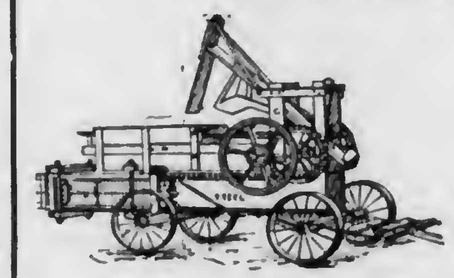

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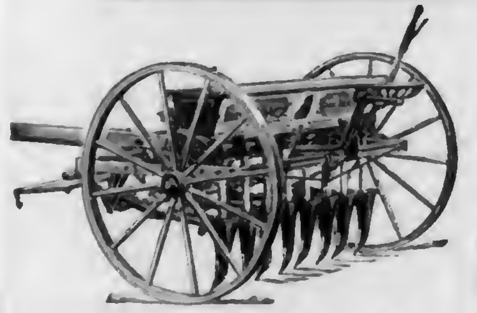

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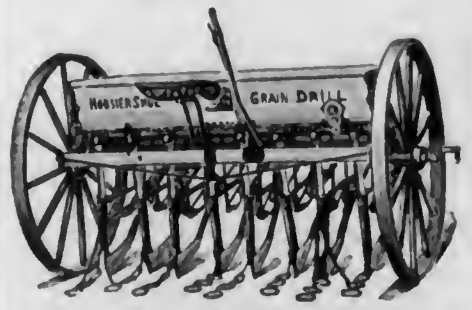

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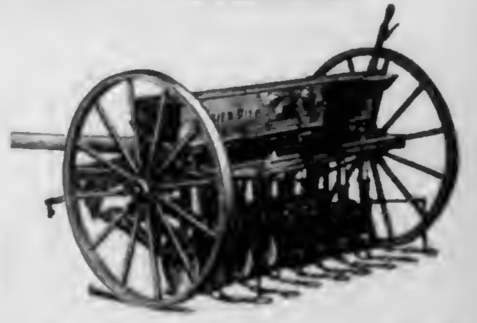

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Means that you are getting a thoroughly up-to-date, practical and durable machine—one that can always be relied on to do its work in a satisfactory way. **It does not mean** that you are buying an experiment, or something that will give you trouble and worry as long as you have it.

Buy the

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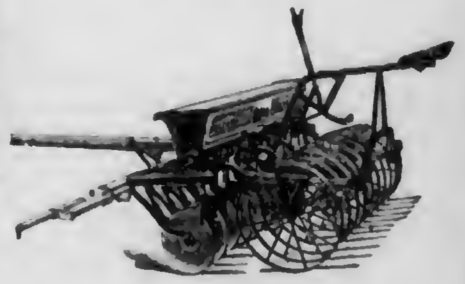
If you want the best and do not want to experiment.



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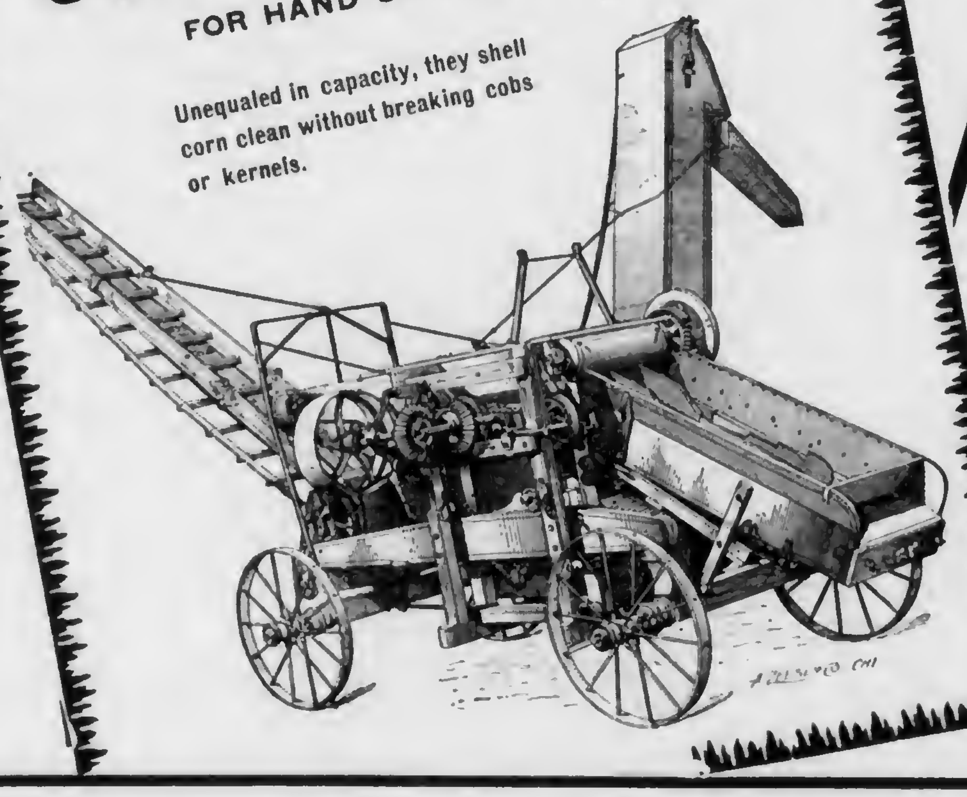
FOR HAND OR POWER USE.

Unequaled in capacity, they shell corn clean without breaking cobs or kernels.



THERE'S PRACTICAL ECONOMY IN KEYSTONE SHELLERS.

They possess few parts, therefore run lightest and cost least for repairs.

Easily adjusted to work in any variety or condition of corn, they often do good work where others fail entirely.

A Keystone Sheller usually does as much work as a size larger of other machines.

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Larger sizes are fully equipped with latest labor-saving devices—have the Keystone self feeder, new adjustable elevators, etc.

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Five-Tooth Cultivators,
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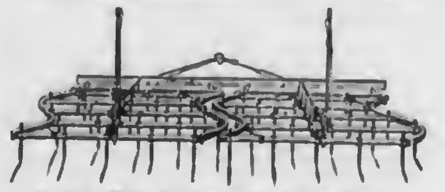
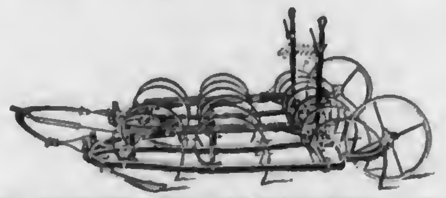
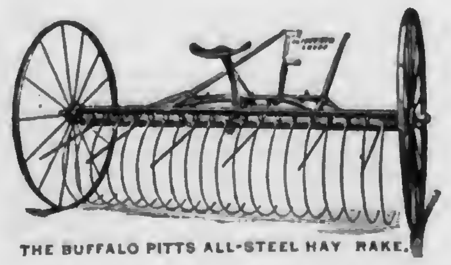

Buffalo Pitts Spring-Lever Spike Harrow.


Buffalo Pitts Combination Wheel and Runner Spring-Tooth Harrow.

THE BUFFALO PITTS QUEEN 5-TOOTH CULTIVATOR.

Dotted line shows wheel released and thrown under for transportation.


THE BUFFALO PITTS ALL-STEEL HAY RAKE.

Buffalo Pitts Spring Flexible Spade-Cut Disc Harrow.

Buffalo Pitts Spring Flexible Disc Harrow.

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Sandwich Corn Shellers

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All Sizes and Capacities, and for Hand, Horse or Steam Power.

Work Fast.
Shell Clean.
Clean the shelled Corn perfectly.
Last Longer than Others.

Built by the Oldest and Largest Sheller Manufacturers in the World.

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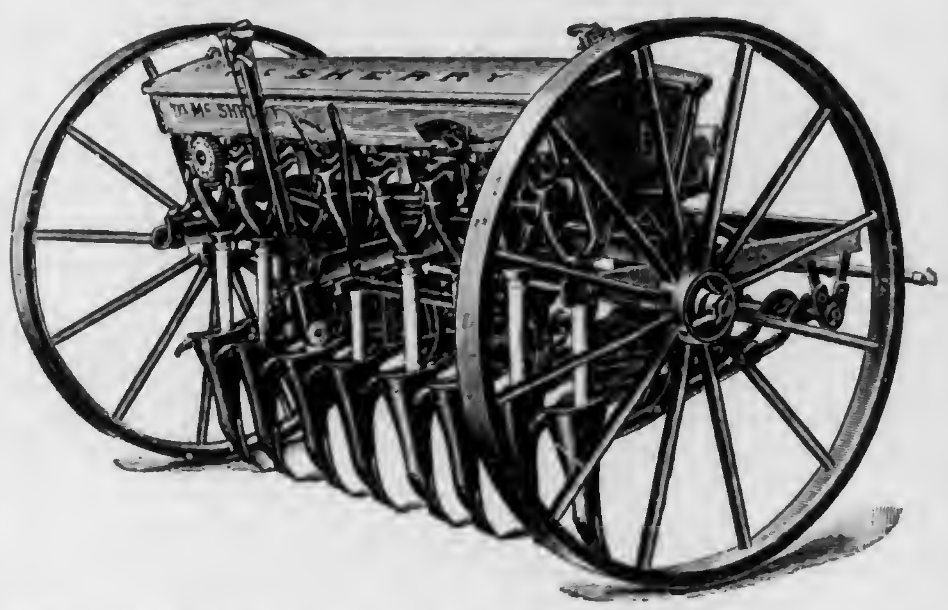

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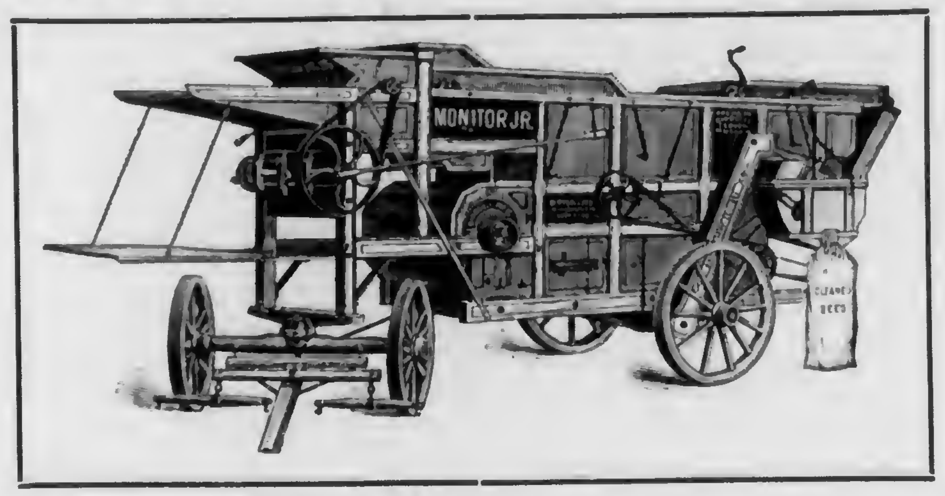

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A superior excellence in design, shape, construction, quality of material, finish and fine working qualities, a combination which adapts them peculiarly to the foreign trade.

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Steel Frame
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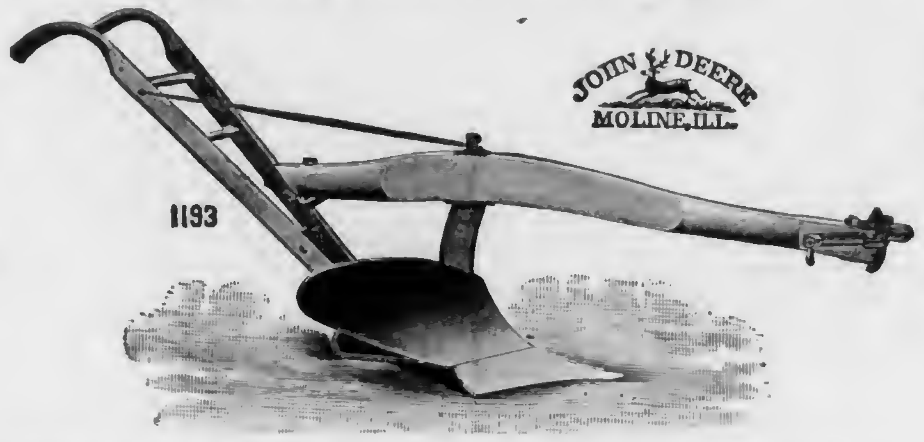

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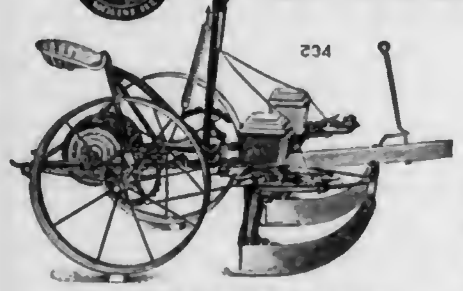

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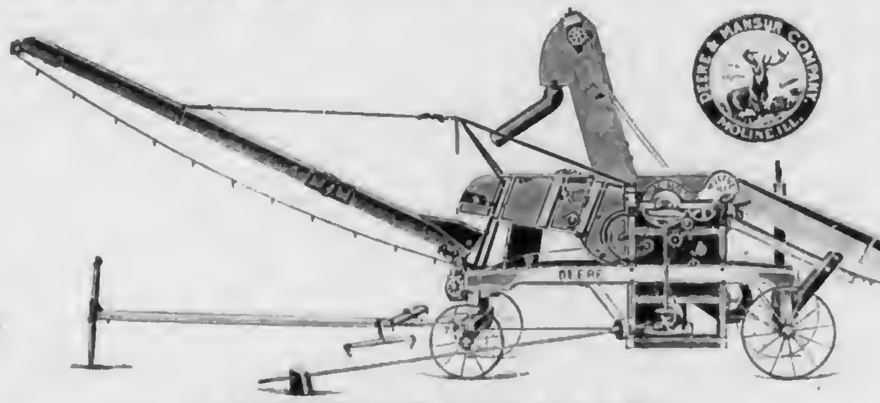
Made in sizes from 4 to 12 feet, and with 16, 18 or 20 inch plain or cutaway discs. The cross bar is square steel tubing, thoroughly braced. Has steel shanks; wood bearings, with oil tubes; steel weight boxes, and each scraper is furnished with separate springs. Seeder or drill attachments can be furnished when desired.



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In the Deere there is no shaking shoe or sieve, and as a result the machine can be run at much higher speed, insuring great capacity. The throat is large and presents moving surfaces on all sides. With these Shellers the corn is perfectly cleaned and the cobs left in good condition for fuel.

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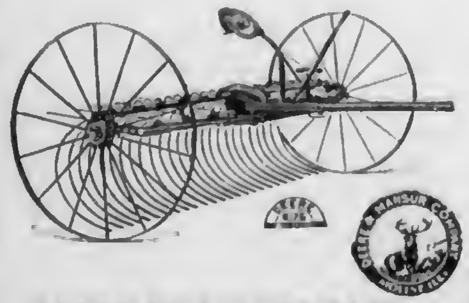

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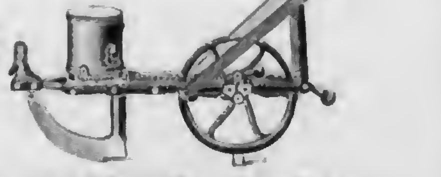

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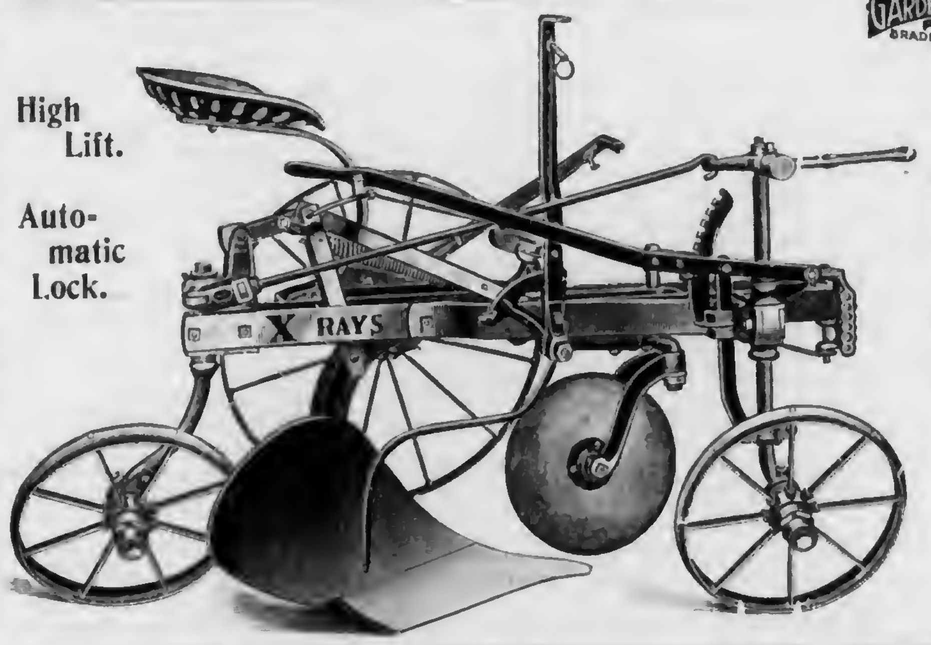

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Have a powerful **LIFTING SPRING.** A boy can handle them easily.

A PATENTED STOP carries the Plow on the frame and lightens draft.

A SPRING CLEVIS eases draft and saves breakage.

"GARDEN CITY CLIPPER" bottoms are put on these Plows.

BEST WORK with **LIGHTEST DRAFT.**

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Draft on **CLEVIS** changes position of wheels so they always track in line of draft; therefore no **DRAGGING** around and no strain on wheels or axles.

DISK HUB is extra long, and turns upon **BALL BEARINGS.**

SMALL REAR PLOW squares corner of furrow.

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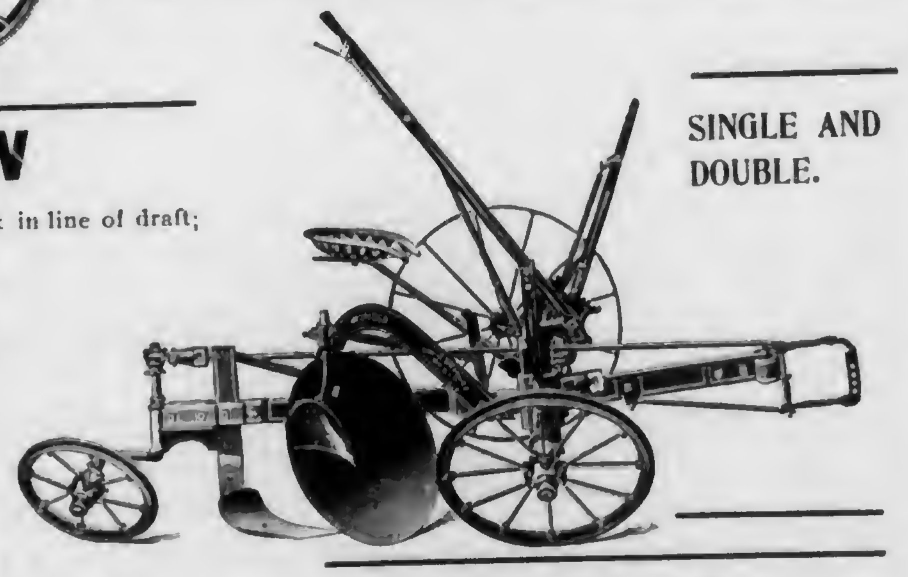
Plows turn either **RIGHT** or **LEFT.**

SCRAPER is adjustable and can be set to throw the dirt in any direction desired.

See May or June issues of this paper for additional description.



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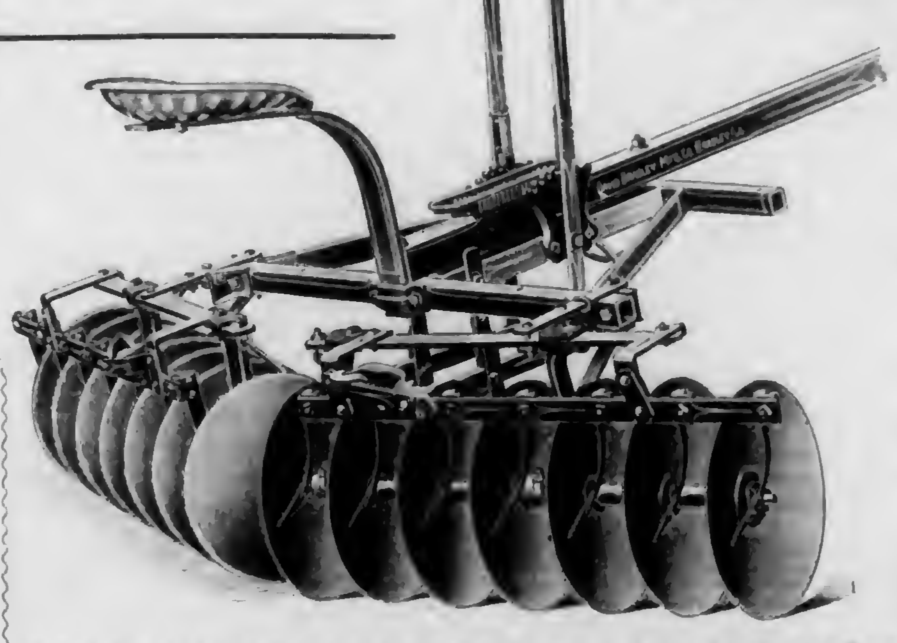

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TWO LEVERS, one for each gang.

BOXES are separate, and can be quickly and cheaply renewed.

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SIZES—16, 18 or 20 in. disks.

WIDTH CUT—6½, 7½ or 8¼ feet.

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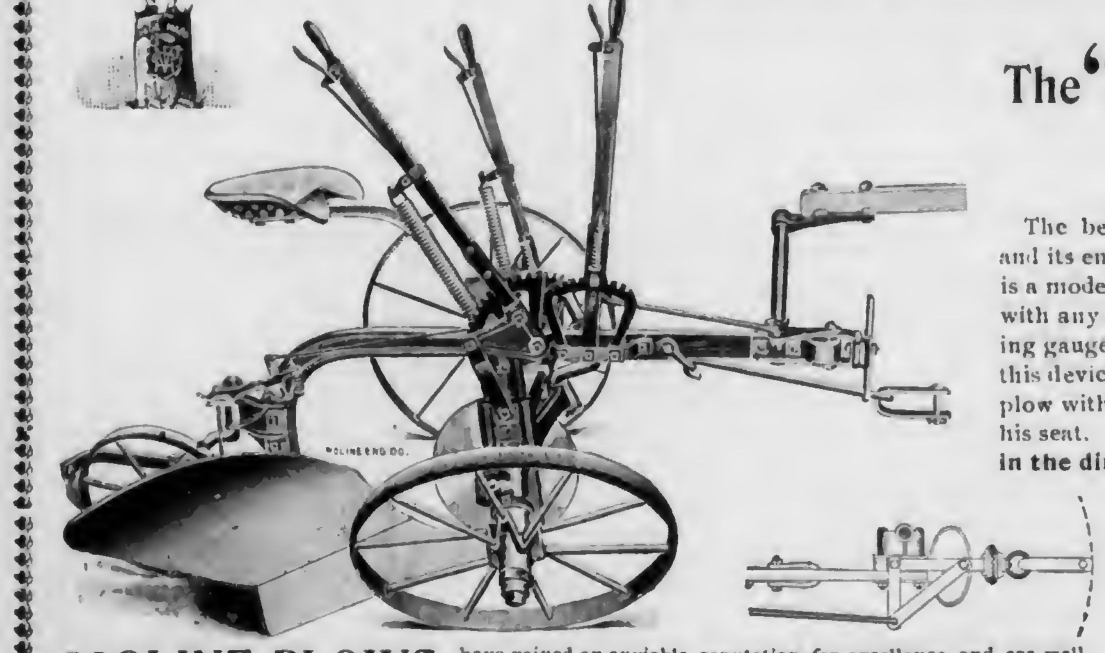
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7-inch,
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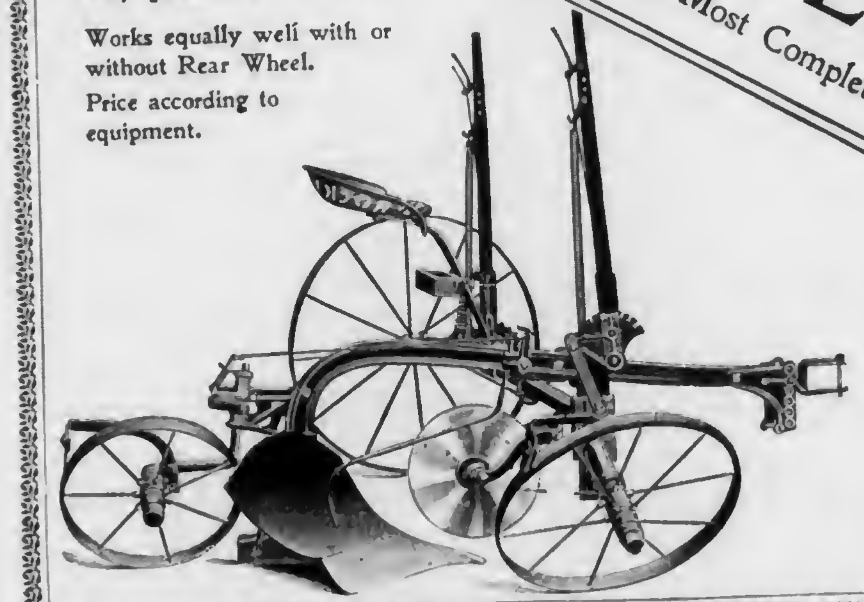

Ox Chains furnished instead of Triple Trees when so ordered.

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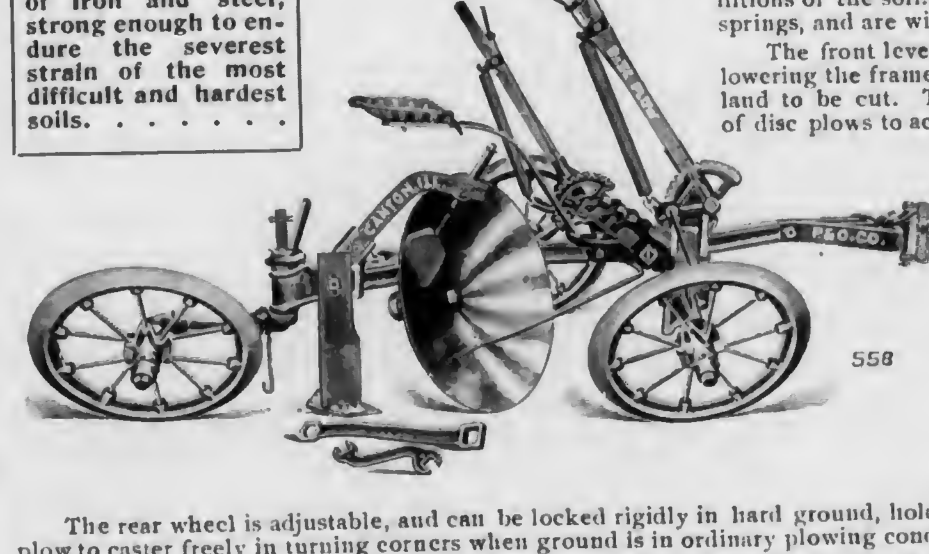
THE "P. & O. CANTON" DISC PLOW.

Constructed entirely of iron and steel, strong enough to endure the severest strain of the most difficult and hardest soils. . . . . . .



The hitch is adjustable for size of team and various conditions of the soil. The levers are equipped with balance springs, and are within easy reach of the driver.

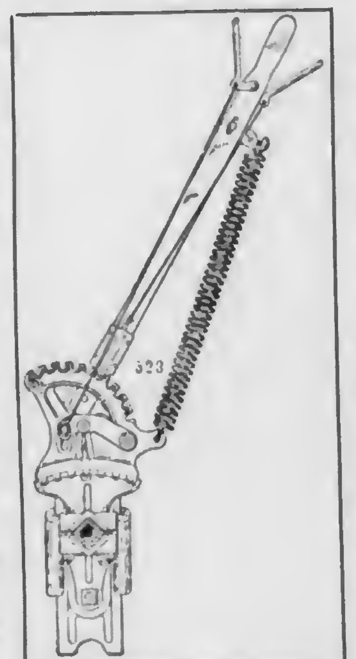
The front lever has two adjustments, one for raising or lowering the frame, and the other regulating the amount of land to be cut. Two levers are required on other styles of disc plows to accomplish these adjustments.

The large size and peculiar shape of the disc causes easy draft, and thoroughly pulverizes the soil. The disc axle is ball-bearing and dust proof, very effective and durable. As the bearings are cup-shaped, constantly holding plenty of oil, the lubrication is perfect. The scraper on the disc is flexible, and can be adjusted to assist in turning the soil. The disc is adjustable for cutting a furrow from 14 to 18 inches wide, and the plow will do its best work when cutting at a depth of from 6 to 10 inches.

The rear wheel is adjustable, and can be locked rigidly in hard ground, holding the plow in perfect line, or allowing plow to caster freely in turning corners when ground is in ordinary plowing condition.

The "P. & O. Canton" Disc Gang Plow is similar in construction to the single disc plow. The discs are adjustable, cutting from 24 to 32 inches, in ground where mould board plows will not scour. The disc gang can be converted into a single plow by removing the front disc.

The "P. & O. Canton" Disc Plow has been successfully operated in the most difficult and stickiest soils to be found anywhere. We have received testimonials from all sections of the country, attesting the superiority of this popular plow.



Detail showing adjustments on front lever.

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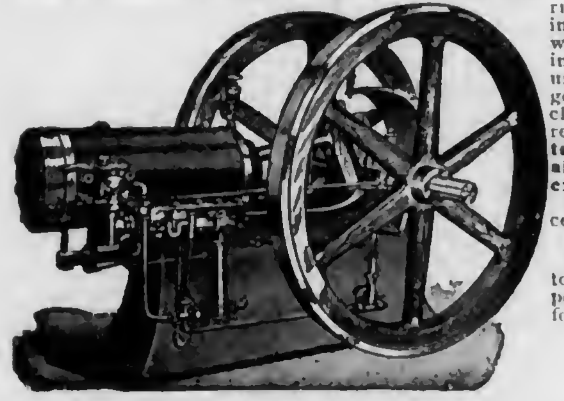

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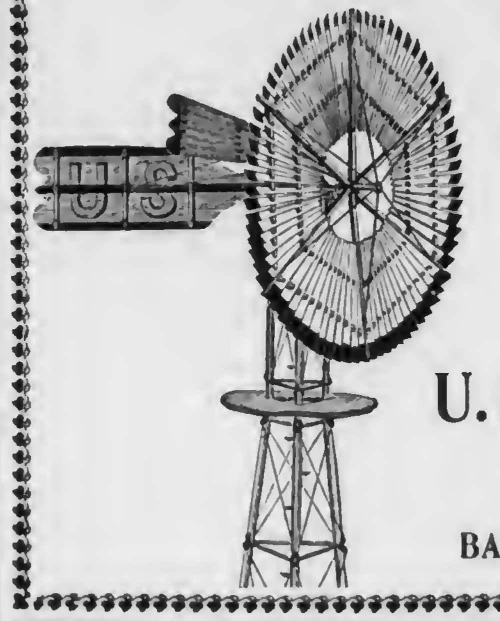

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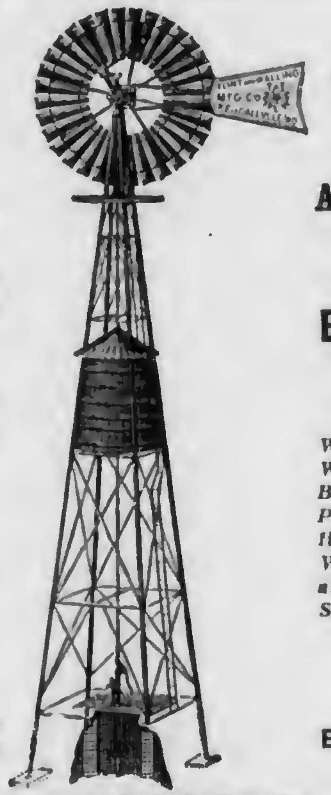

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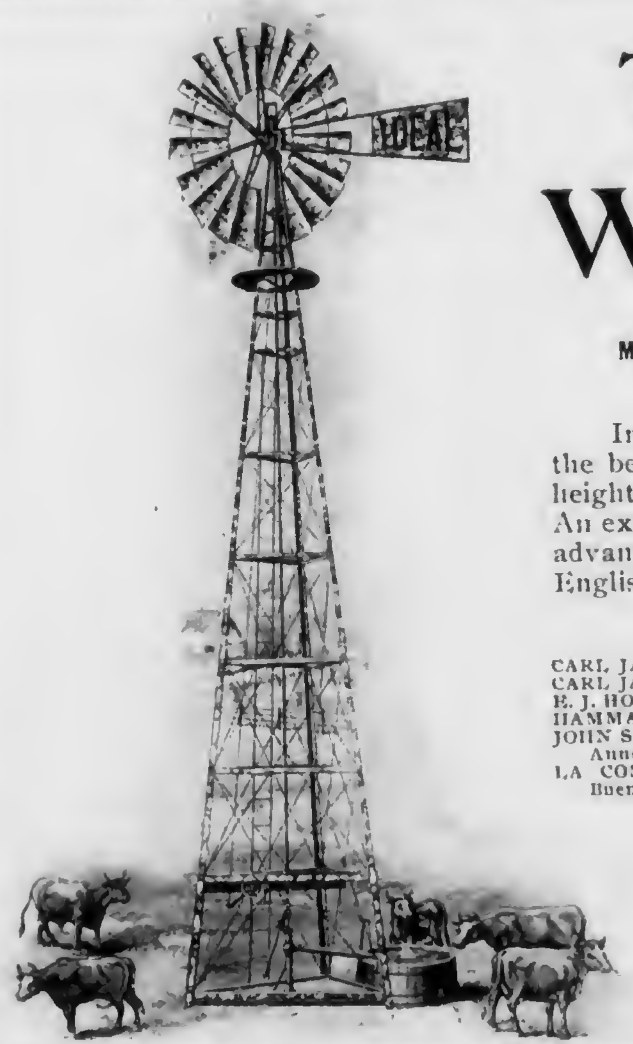

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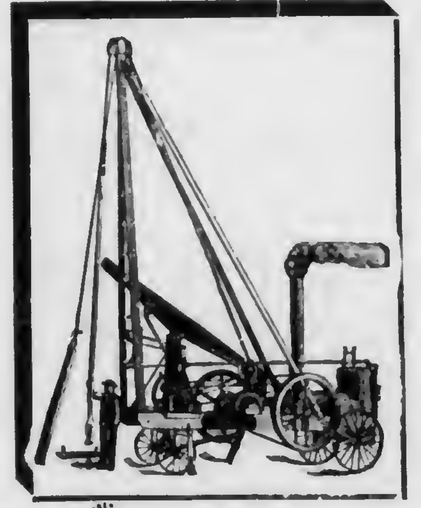

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(1)

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CONTENTS The Code contains 800 pages of 75,000 Ciphers; 65,000 have sentences, and 10,000 are blank, enabling the addition of private phrases under their proper headings.

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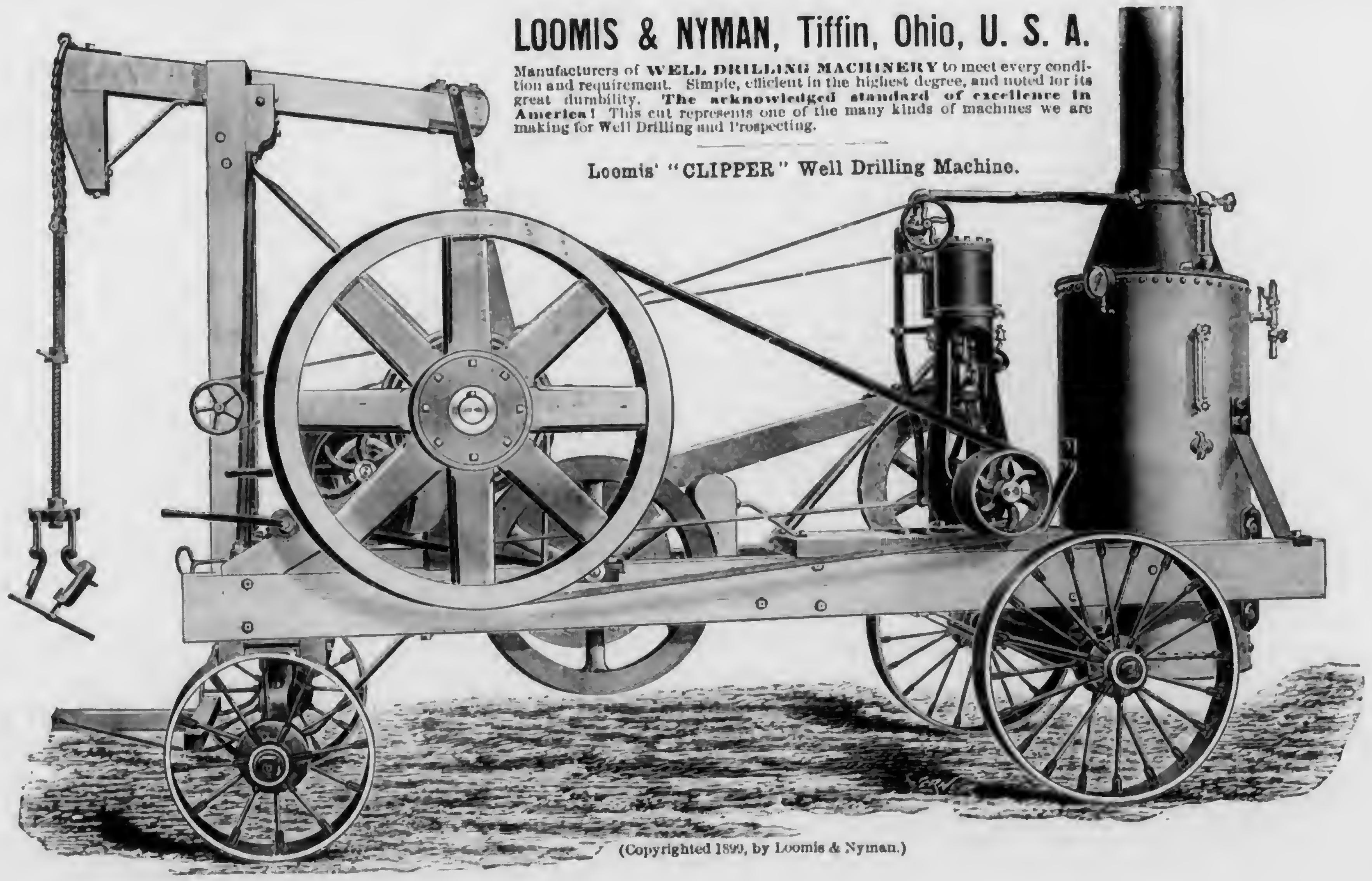

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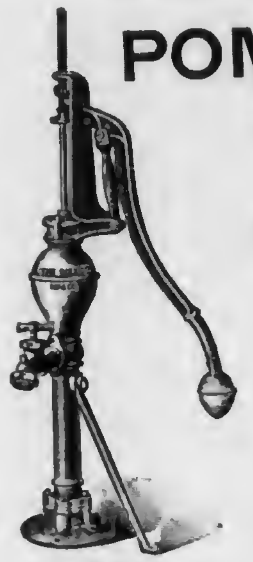

Fig. 1141.

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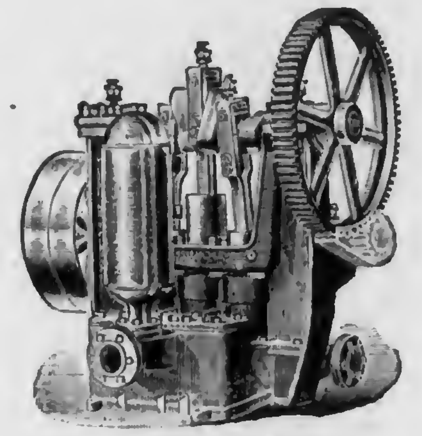
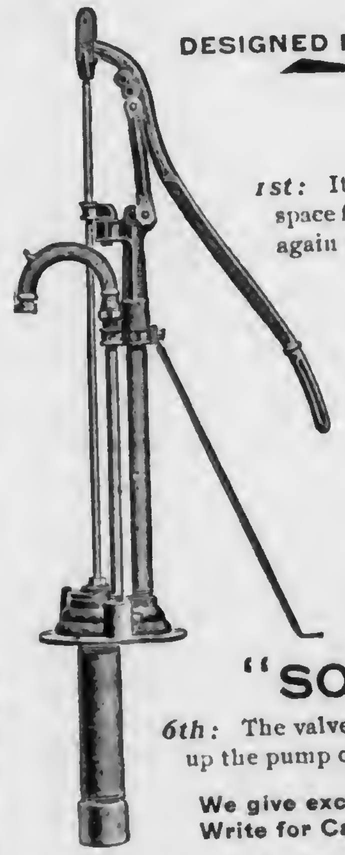


Pompe "Triplex" à moteur.

Red Jacket Force Pump



DESIGNED FOR **EXPORT TRADE**

6 POINTS 6

1st: It can be taken apart and packed in a small space for shipping, and can be easily put together again when received.

2d: It is adapted for any kind of shallow or deep wells.

3d: It is for hand or wind-mill use or can be used with other power by getting special connections.

4th: It is a double-acting force pump, and this means a division of labor in pumping or forcing water to any distance.

5th: It works easily in very deep wells on account of "no friction" in raising the water.

"SO EASY TO FIX"

6th: The valves can be taken up and fixed without taking up the pump or getting down in the well.

We give exclusive territory to Foreign Agencies. Write for Catalogue G and full particulars.

RED JACKET MFG. CO.,
DAVENPORT, IOWA, U. S. A.

THE BARNES MANUFACTURING CO.,

MANSFIELD, OHIO, U. S. A.

Iron and Brass Pumps for ALL PURPOSES

Hand and Wind Mill Pumps,
Single and Double-Acting Thresher Tank Pumps,
Spray Pumps,
Rotary Pumps,
Centrifugal Pumps,
Artesian Well Pumps,
Heads and Working Barrels.

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Write for Catalogue and Prices.

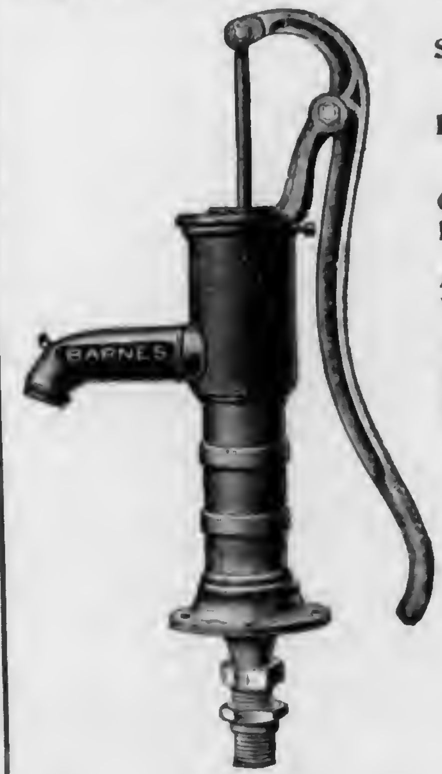


Fig. 107

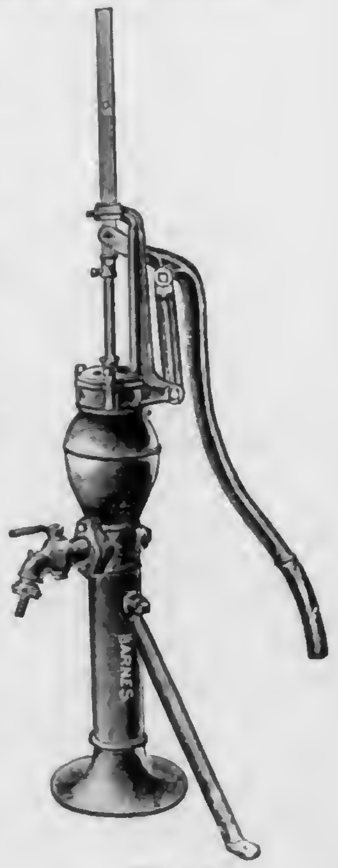
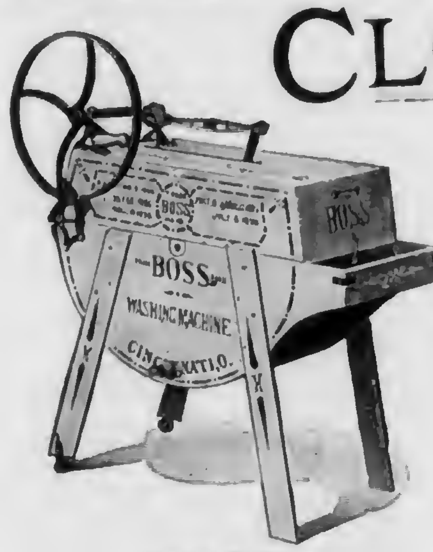


Fig. 151

The BARNES MANUFACTURING CO.,
Main St. and Longview Ave.
Mansfield Ohio, U. S. A.

CLOTHES WASHER.



Closed View.

This machine will perfectly cleanse clothes, and in less time, and absolutely not injurious to them, and with less labor than could be done by any other method.

We are desirous of establishing local agencies in all large cities, and with this end in view, solicit correspondence. Also write us for descriptive catalogue and price-list.

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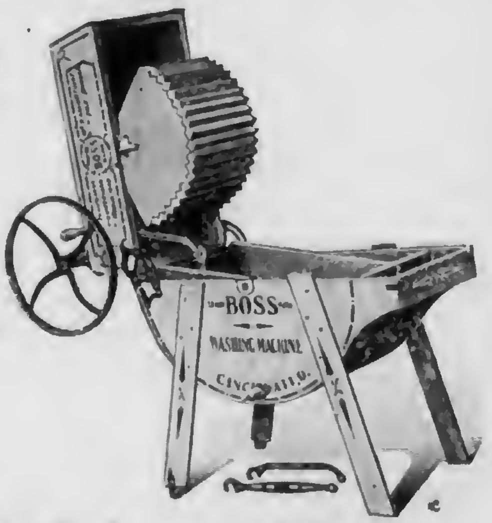
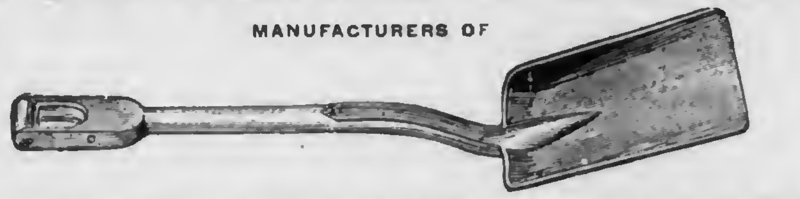


Open View.

T. ROWLAND'S SONS,

MANUFACTURERS OF



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Factory at Cheltenham, Montgomery Co., Penna.
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FOR EXPORT.

WE MAKE MORE THAN

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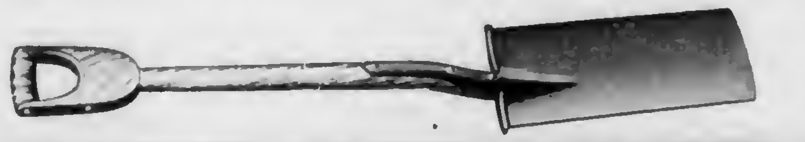
WYOMING, PA., U.S.A.,
MANUFACTURERS,

SHOVELS



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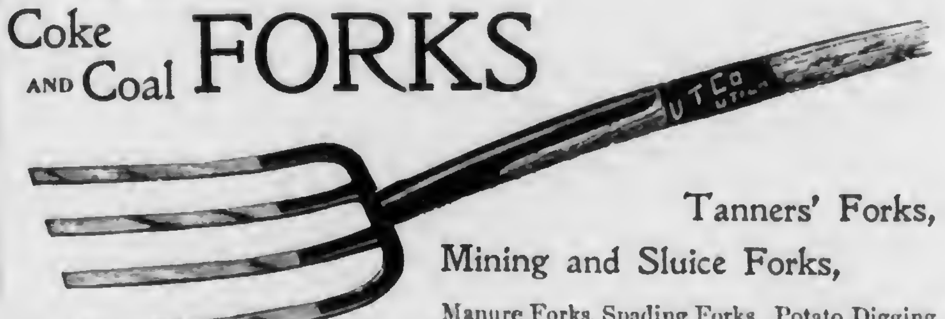

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Manufacturers of

Mower Knives, Reaper Sickles, Sections, Guards, Knife Heads, Pitman Boxes, Rake Teeth, Section, Head and Guard Rivets, Link Chain Belting, and Attachment Links, and other Agricultural Implement Supplies.

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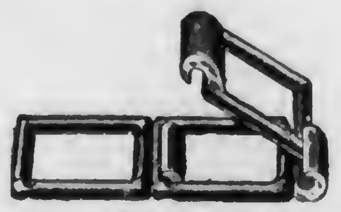

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MANUFACTURERS OF

HAND AND POWER PUMPS

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THE BEST EQUIPPED PUMP FACTORY IN THE WORLD.

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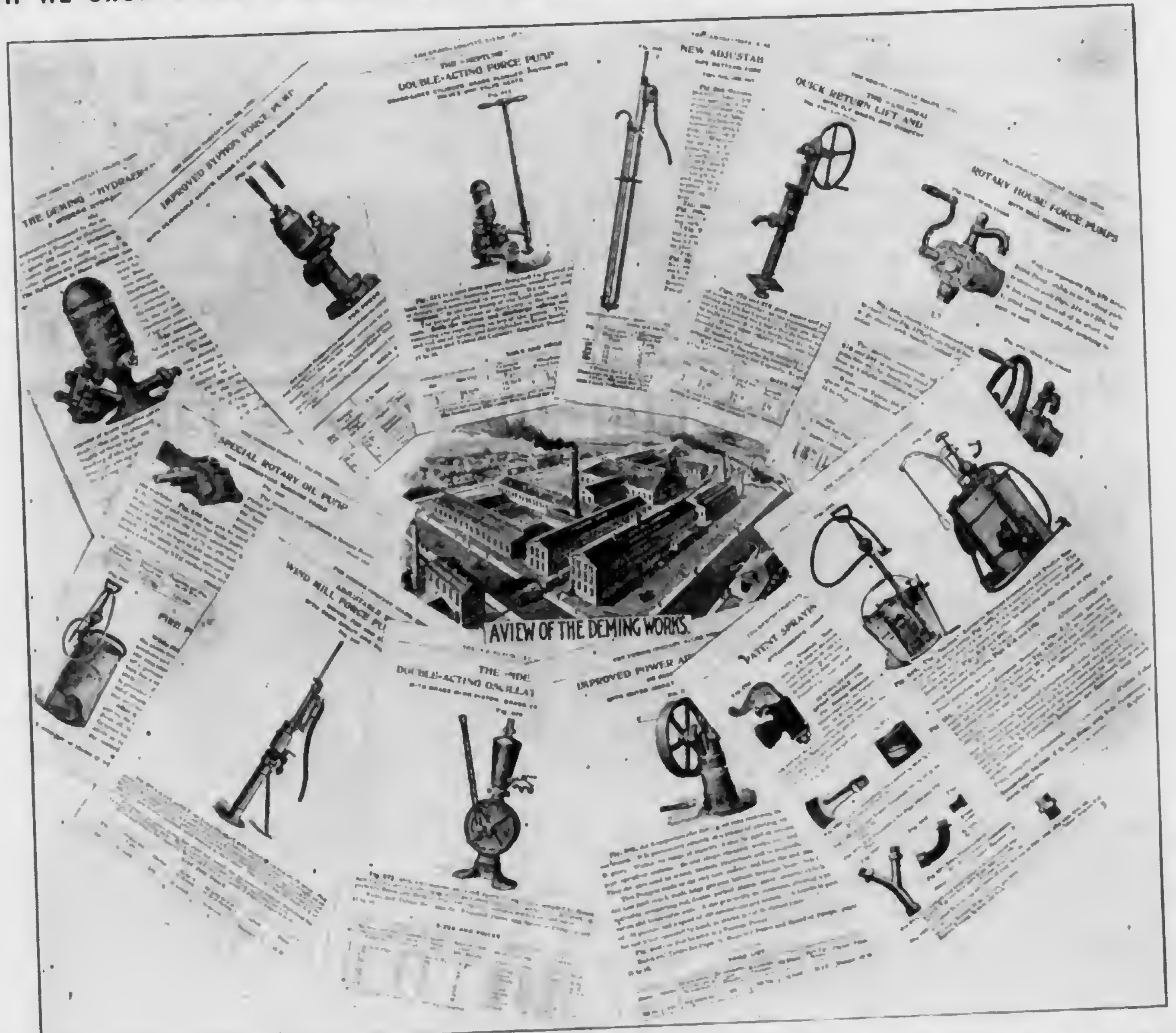
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HARDWARE AND MACHINERY MERCHANTS are invited to send for a copy of our NEW CATALOGUE and PRICE LIST, which will be forwarded post free.

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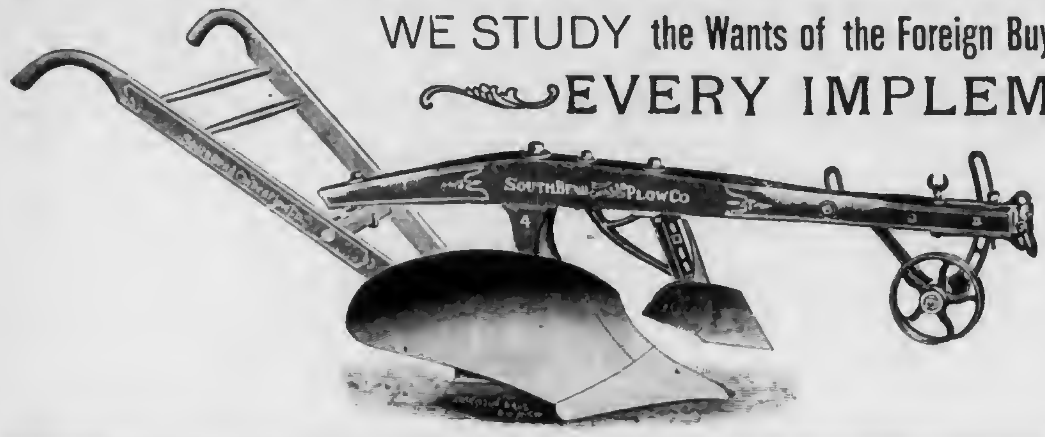
The Best Plows Produced IN THE WORLD Are Made in Our Factory

WE STUDY the Wants of the Foreign Buyer. WE FURNISH Special Goods at Special Prices

EVERY IMPLEMENT GUARANTEED



WE WILL PLEASE *or no pay expected.* Our large Catalogue illustrates every style plow now in use. Write for it and let us know what you want. We can furnish it to you.

SOUTH BEND CHILLED PLOW CO.,
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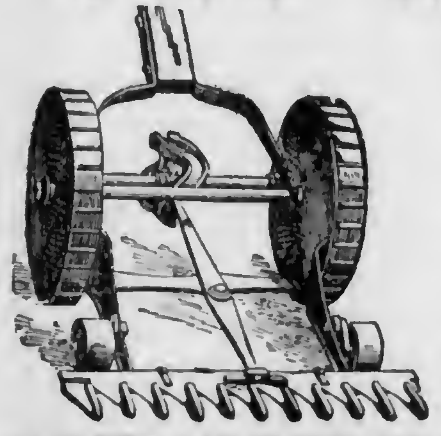
THE MOWER

THAT WILL
KILL ALL THE WEEDS IN YOUR LAWNS.



If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear.

THE CLIPPER WILL DO IT.

CLIPPER LAWN MOWER CO., Norristown, Pa., U. S. A.

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Established 1822.

Manufacturers of
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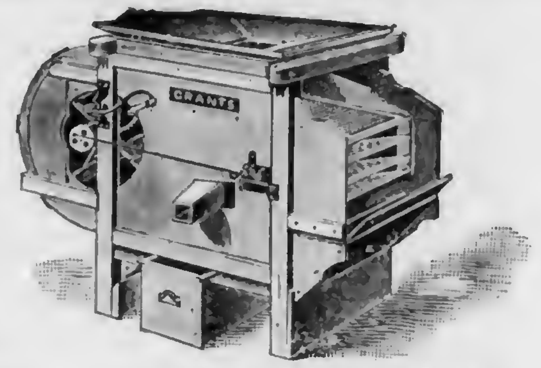

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Largest and Oldest Builders of
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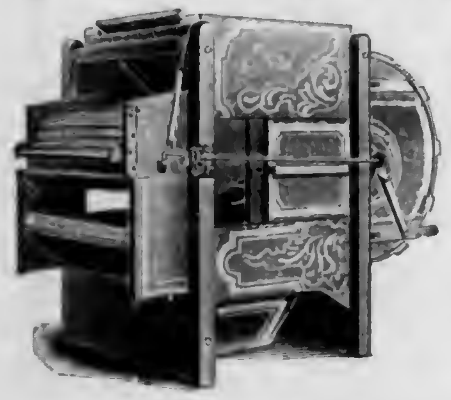
The New Michael Fanning Mill



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C. H. MICHAEL, Manufacturer of Fanning Mills exclusively.

Equipped with 9 sieves and screens, 2 zinc hurdles, a chess-board, tail-board and a spout, suitable for all requirements of a farmer.

Size: 27 inches wide, 48 inches long and 48 inches high.

Knocked down and boxed with matched lumber for export, occupying a space of thirty cubic feet.

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The "Racine" Farm and Warehouse
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Made in six sizes for cleaning, grading wheat, barley, corn, oats, and all kinds of grass seeds, beans, peas, rice, coffee, lentels, etc.

Write for prices and Catalogue.

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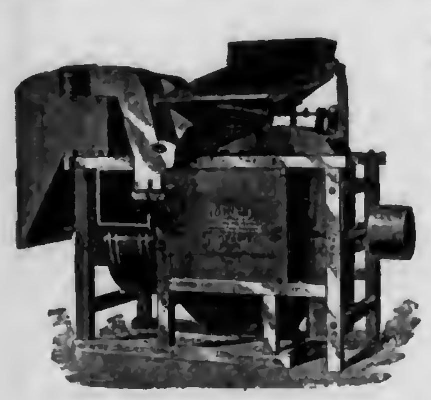

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Barley Scourers,
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Flour Packers,
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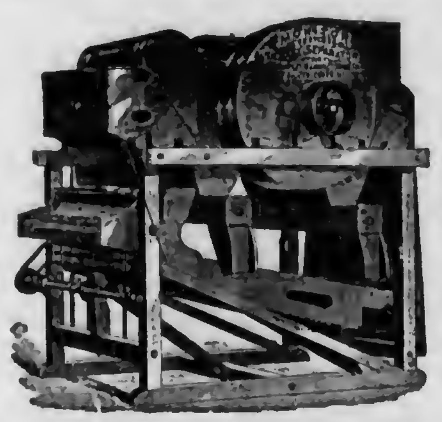

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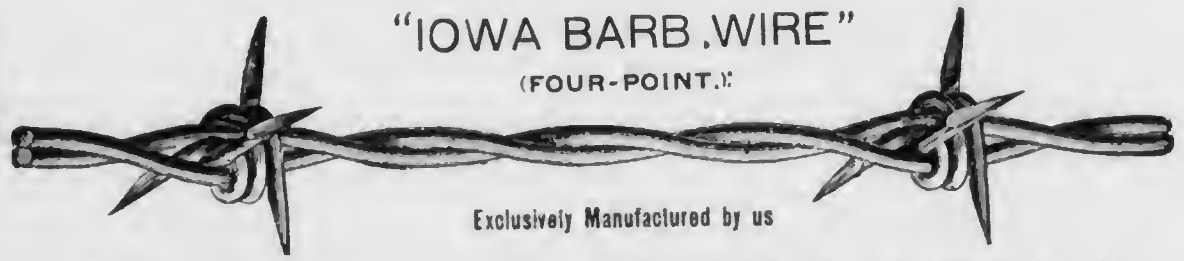

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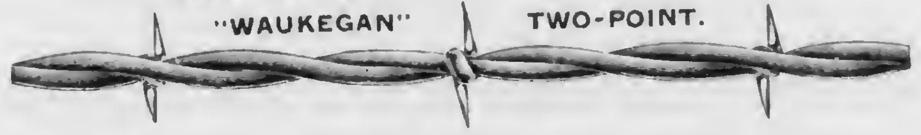
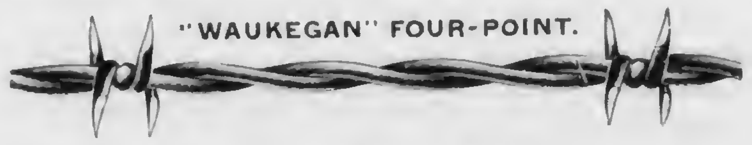
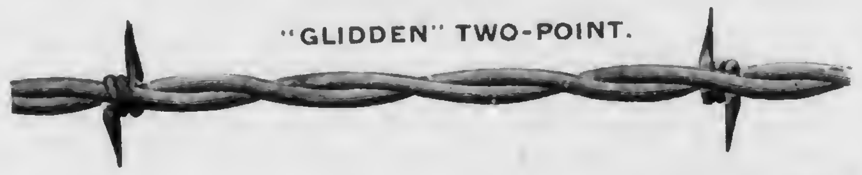


"WAUKEGAN" FOUR-POINT.



"GLIDDEN" TWO-POINT.



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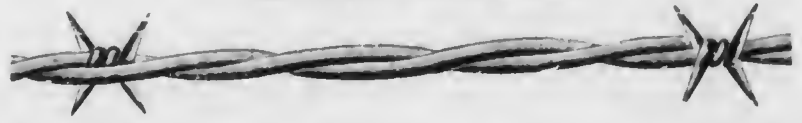

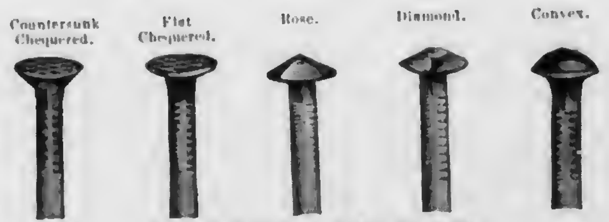

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WIRE NAILS. Round, Oval or Square Wire.

Every Style of Head or Point. Our Nails are Guaranteed First-class in every respect, and will be found Stiffer, Stronger and Better made than European Nails. Packed in wooden kegs and cases, canvas bags and paper parcels of various sizes.

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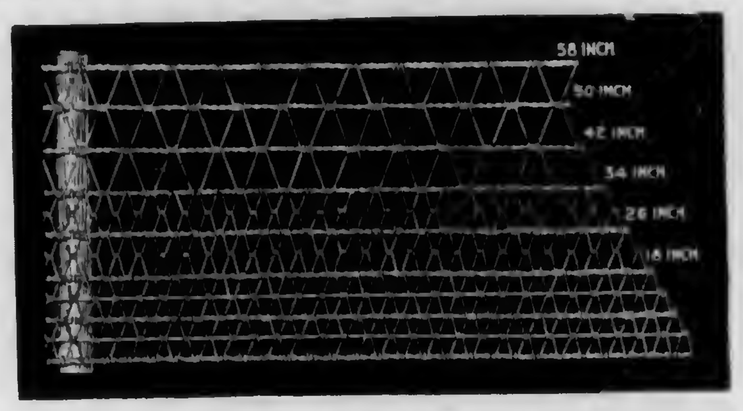
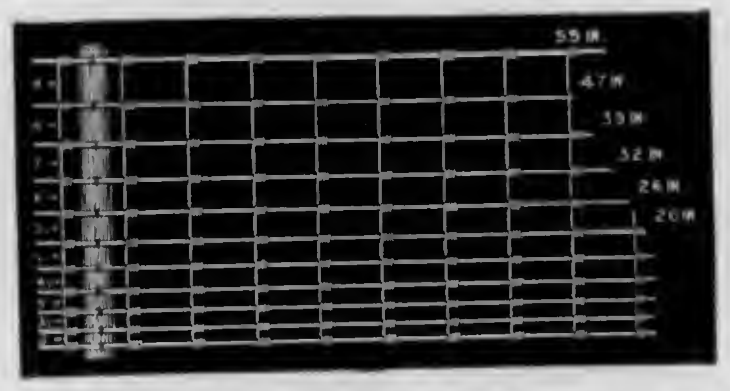
All made of Hard, Strong Steel Wires, heavily Galvanized.



ELLWOOD Steel Fences—6 heights, 6 styles.



AMERICAN Field and Hog Fences—6 heights, stays 12 in. or 6 in. apart.

The wires in these fences are large enough for all ordinary requirements, the fences being cheap, durable and efficient—will last a lifetime. Put up in rolls of 20 and 40 rods—sold by the rod. Perfectly adapted to fencing railroad rights of way, farms, fields, orchards, vineyards, etc.

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against a disc harrow that pulls easily. Other faults may be almost overlooked if it possesses that one virtue.

That is the strong point in our

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They run easily.

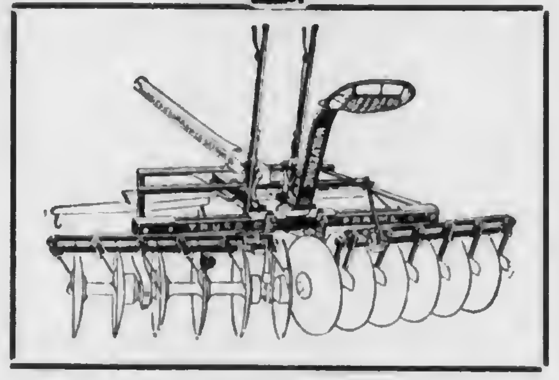
It is this ease of running that established them standard in America.

These discs have genuine bicycle ball bearings. They are well made, tested true and give to our discs a light draft that is peculiar to them.

You can't find that sort of a draft on any other disc harrow on earth. Besides its easy qualities the draft is from the under-centre, and that keeps it steady and the discs cutting an even depth.

Get our 1900 catalog and learn other good points about our **Detroit** and **Wolverine.**

Riding and Walking Harrows, Cultivators, Seeders, Planters, Fertilizers, Bean Harvesters, Stalk Cutters, Manure Spreaders, Road Levelers, Truck Scales, Hand Potato Planters and Bicycles.



NO HAY OBJECIÓN

contra un rastrillo de disco de tiro fácil. Y casi se le pueden perdonar otros defectos al que posee esta condición.

Es esta la cualidad sobresaliente de nuestros

RASTRILLOS DE DISCO "DETROIT" y "WOLVERINE."

Ruedan con gran facilidad.

Este fácil rodar los señala como modelos en Norte América.

Los discos tienen verdaderos coginetes de bicicleta con esferas. Están esmeradamente hechos, bien probados, y proporcionan á nuestros discos un tiro liviano que les es especial.

Igual ligereza en el tiro no se encuentra en ningún otro rastrillo de disco en el mundo. Además de esto, la tracción se hace desde el centro interior, lo cual da estabilidad é igual profundidad al corte de los discos.

Pídase el catálogo para 1900, y conózcanse las demás buenas condiciones que reunen el "**Detroit**" y el "**Wolverine.**"

Rastrillos con ó sin Asiento, Cultivadoras, Sembradoras, Plantadoras, Fertilizadoras, Segadoras de Judias, Picadoras de Tallos, Regadoras de Estiércol, Niveladoras de Caminos, Balanzas de Carreton, Plantadoras de mano para papas, y Bicicletas.

AMERICAN HARROW COMPANY,
DETROIT, MICHIGAN, U. S. A.

The Name "OLIVER" is a Guarantee of Excellence.

The Immense Factory Owned and Operated by

The Oliver Chilled Plow Works

Continues as Usual to Turn Out the Best Plows Made.

Europe, Asia, Africa, Australia, North and South America, and the Islands of the Sea compliment us by using our

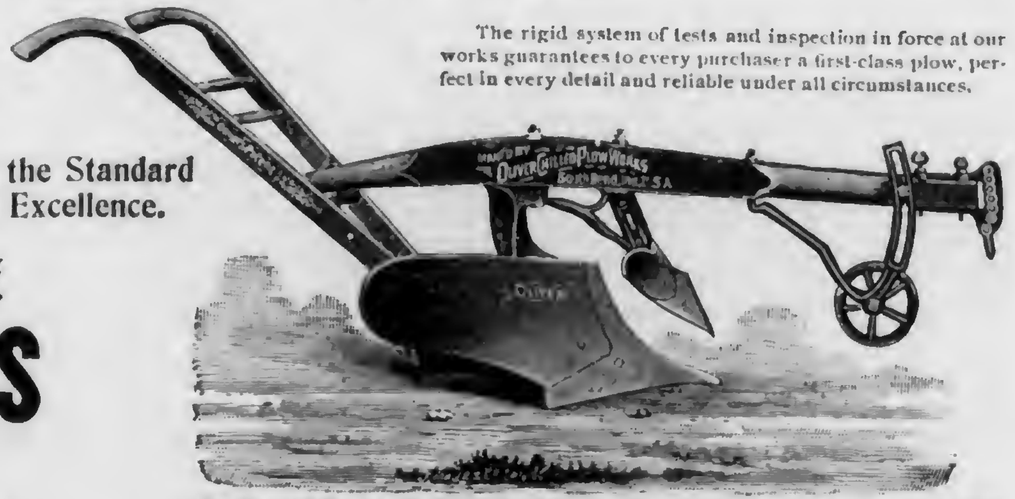
WORLD RENOWNED CHILLED PLOWS.

And at Home and Abroad THE OLIVER Is the Standard of Excellence.

Our large and varied assortment provides for the most exacting style of plowing, and from the easiest to the most difficult soils.

Oliver Chilled PLOWS Are the Best on Earth.

The rigid system of tests and inspection in force at our works guarantees to every purchaser a first-class plow, perfect in every detail and reliable under all circumstances.



The No. 40 Series Full Chilled Sloping Landside. Wood and Steel Beam.

Nos. 98 and 99 Oliver Steel or Wood Beam Combination Plow. With Reversible Point and Wing. Self-sharpening by use.

Our business has grown from 1,500 plows in 1873 to an annual output of more than 200,000 plows, and we have

The Largest Distinctive Plow Works in the World.

Oliver Chilled Plow Works,
South Bend, Indiana, U. S. A.

EXPORT IMPLEMENT AGE.

Vol. III. PHILADELPHIA, PA., U. S. A., OCTOBER, 1900. No. 1.

AN AMERICAN SKYSCRAPER.

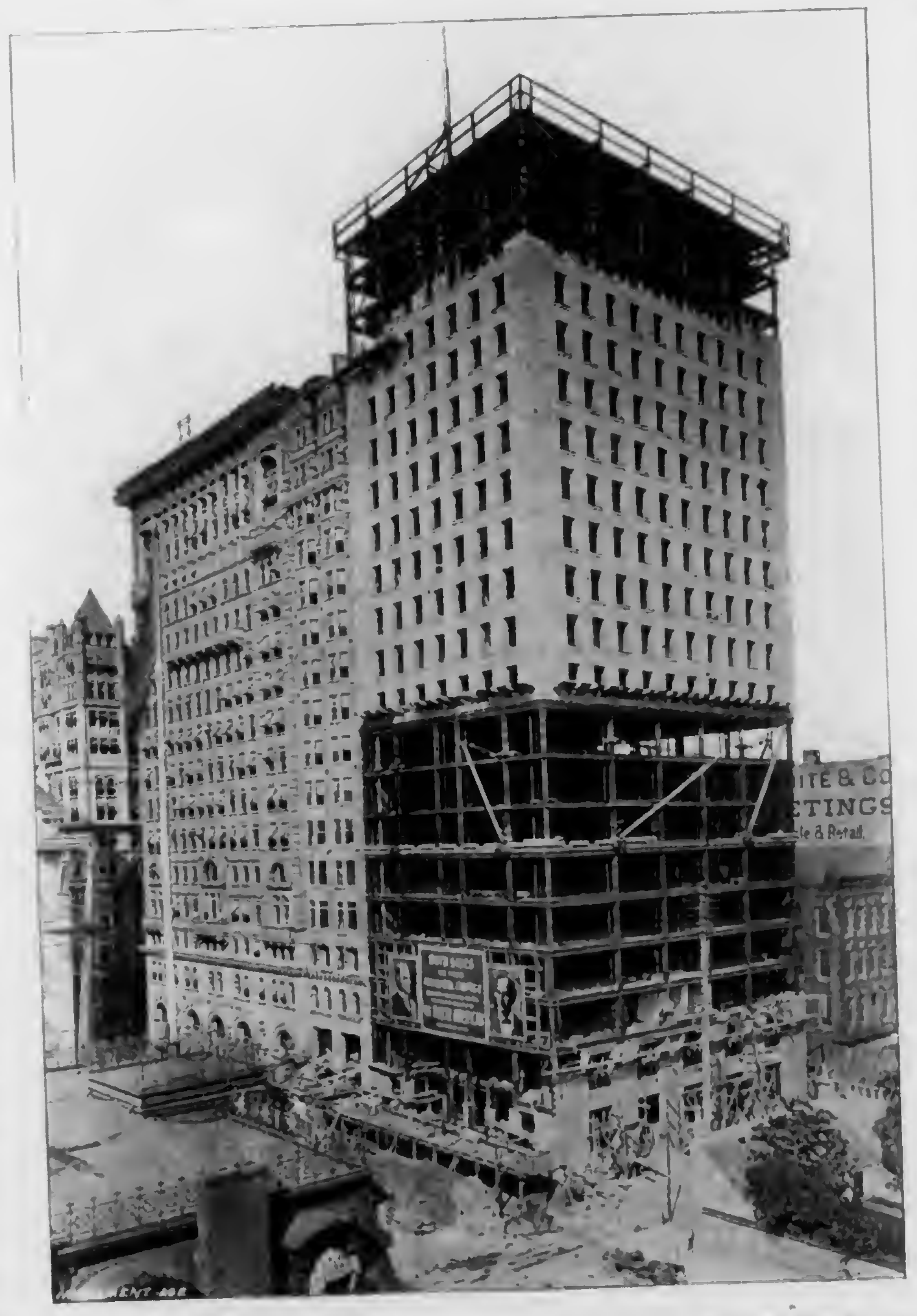
A Building with Twenty Floors, the Stonework Being Done Near the Top.

In the United States are hundreds of very tall buildings, known as "sky-scrapers," some reaching over 300 feet into the air. As an evidence of how a building may be made of iron and steel, and in a short time, we illustrate the "North American" building now under construction at Philadelphia.

Much curiosity has been aroused by the present strange appearance of the building, which seems to be growing from the sky down, instead of from the ground up. It will be twenty floors high, and from the tenth to the eighteenth floors stretches a solid front of stone work, and to the casual glance this enormous weight is held in place with no apparent support. Below it are only the open floor spaces for the framework. In reality the condition signalizes a remarkable feat in the construction of modern sky-scrapers. Sky-scrapers differ from ordinary structures, in the fact that their framework or skeleton is of steel. In smaller buildings the entire construction depends upon the foundations, and each story upon the one below it, whereas in sky-scrapers everything is hung to the steel, and each story is independent in itself; that is, the steel work extends in a flange of the floor girder, and supports the stone work of that story. The advantages of this are obvious. Instead of following the slow process of building upward from the bottom it permits the builder to begin at any floor where the material may be handled with the greatest facility. The stone work on the "North American" building was begun in two places—at the ground level and at the tenth floor—not only because of the saving of time, but also on account of the limited street area for the delivery of materials. As soon as the skeleton was up the concrete floors were laid, and when the material arrives it is hoisted to the particular floor upon which work is being done.

Another surprising feature of the new building is the rapidity with which it is being erected. The most serious problem was the digging of the foundations, which are thirty-five feet below the street level, on a stratum of gravel, because those supporting the building proper had to be isolated from those supporting the power plant in the cellar, in order to insure freedom from vibration.

In spite of these difficulties, the building will be ready for use by November 1st next, less than one year after the application of the first spade, and the 250 offices will be ready for occupancy by February, when the finished building will be perhaps the highest in the city of Philadelphia.



An American "Sky-Scraper" Building twenty stories (300 feet) high. Working from the top.

Russian import duties have been increased 10 per cent. on manufacturers of iron and wood, which, presumably, covers agricultural implements.

INDUSTRIAL ENLIGHTENMENT.

The probable effect of American industrial energy on foreign peoples cannot be easily surmised, because of the essential differences, racial and mental. When future philosophers come to write of the grand upheaval which occurred in the nineteenth century in the intellectual, moral and physical condition of the people of the United States, they will write of it as the greatest sociological fact of the ages. We cannot estimate the energy, power and magnituda of the mighty agencies under which the United States have advanced within a little over a century from a wilderness to a garden.

The true significance of that mighty force, which has surprised the world at large, as well as ourselves, is that it is to penetrate the outside world and work wondrous transformations there, not necessarily of a political character, much less of a religious nature. This greatest crusade of intelligence, industry and enlightenment on the part of Europe and America will penetrate all lands, and change the conditions of the people through industry, creating discontent with poverty, and stimulating a desire to know more of life and their latent energies. The spirit of unrest, which was born in the nineteenth century, will be a mighty crusade in the twentieth.

It is well to keep in mind that during the past five fiscal years the farmers of the United States have raised and exported $3,500,000,000 worth of agricultural products, figures which demonstrate the value of our export trade.

Last month there were shipments of agricultural implements and machinery to New Zealand, valued at $20,000. The call for hardware from New Zealand has of late been active.

American bituminous coal is now being unloaded at seven or eight seaports along the Mediterranean. This fact is full of promise to the export implement interests. The establishment of trade relations in coal opens the way for other products from our side.

THE IMPLEMENT IN THE NEW CIVILIZATION.

The most significant development of this age and of this year is the development of the agricultural resources of not this or that country but of the world. Better pay for crops has stimulated agriculture in the United States, coupled with the broadening opportunities for securing a large share of the world's market. Argentina every year develops more scientific methods of agriculture. In the old world agriculture has received a stimulus through the development of manufacturing that it has never known. Orchards and vineyards in their appropriate regions are multiplying. Throughout the South of Europe, and particularly Southern Russia, and through Central Europe, particularly in the small German States, a stimulus has been given to more intense methods of cultivating the soil. With this great expansion of the greatest and most honorable industry known to man comes a call for help of machinery. In the past five years implements in foreign lands have been introduced to as great a degree as during fifteen or probably twenty years previously. The demand will grow as man develops.

This call for agricultural implements is a remarkable, an interesting, and a significant movement of no less than three hundred millions of people. It is the greatest onward step ever taken by humanity. Because we are in the mighty movement, because we are actors in it, because we are in the front ranks, so to speak, we do not realize the magnificent and portentious consequences of this mighty and far-spreading upheaval of the masses of the United States and Europe. The implement maker is the representative of the progress of the race, of the age, of the hour. To him is due the credit of arousing and stimulating the dormant energies of man, of spiritualizing his mind, of ennobling toil, of broadening his intellectual vision, of deepening his moral sense, of strengthening those noble motives whose activity lead to the best realization in man of all that is good and great and soul-inspiring. This view is no sentiment. That which arouses and develops and maintains the habit of industry in man is the noblest and nearest divine in man.

A TRIBUTE TO UNITED STATES IMPLEMENTS.

A Canadian implement journal, published at Sarnia, Canada, and entitled "Farm Machinery," is discussing the fact that although there is a tariff of 20 per cent. against United States agricultural implements, yet the farmers of Canada buy largely from United States manufacturers. It gives the facts as follows:

"In 1899 Canada imported $1,095,000 worth of farm implements and agricultural machinery; of this amount $347,133 was paid by Ontario farmers for harvesters, $252,980 by farmers in Manitoba, and $49,671 by farmers in the Northwest territories. Under the old tariff of 35 per cent. in 1894 the value of reapers, mowers, harvesters, plows, and seed drills imported was $128,593, from which it is seen that since the lowering of the tariff in 1895 to 20 per cent. the imports of this class of wares has increased more than eight times the figure in 1894. This increase in importation is much greater than the increased demand, due to wearing out of old machinery and opening up of new farming territory, and it seems must reflect a decrease in home sales of home manufacturers.

"What cause should be assigned for this disproportionate increase in importations? Is it that American machines are deemed better? This does not seem a probable cause. Is American machinery sold cheaper after importation than Canadian machinery? If so, why should that be possible except as the result of cheaper material and more productive shop methods? Is it because manufacturers in the States work harder for the trade, with a more efficient sales organization? Of all these queries one seems to answer itself offhand—that American manufacturers are able to turn out machinery cheaper, and that the tariff of 20 per cent. is not high enough to prevent their more than successfully competing on their own ground with Canadian makers of farm machinery."

Despite the tariff against the United States the importations of implements into Canada increase every year. While we do not agree with all the claims mentioned in the above, yet it is an admission that Canadian farmers can buy their implements from the United States cheaper than at home, though Canada has many large manufacturing establishments, while the tariff is high, and it should be sufficient to keep all others out. The fact is that the Canadian farmer knows what he wants, and knows how to buy to the best advantage, so he buys from the United States factories, although he is surrounded with factories at home, and yet there is a tariff to protect the Canadian manufacturer. This condition of affairs demonstrates that American implements and machinery are well made, cheap, efficient, and durable, or they would not be in demand.

AMERICAN FACTORIES.

It is most interesting to note the development of the spirit of pride among manufacturers of implements, especially in the interior arrangement and equipment of factories. There is something about them distinctively American. Mechanical methods in arrangement of tools and machines manifest themselves. There is an eye to symmetry and beauty, a sort of clock-like completeness of part to part, an eye to minute economies in handling material, in space taken up, and in matters of personal comfort to workmen, which attract attention. There is a neat and economic adjustment of steam power to machinery of the stock room to output, and there is scarcely any evidence in our modern factory of lack of precise calculation of means to ends, of costs to results. Each succeeding new factory shows some further progress along these lines, and the net result redounds to the credit of American enterprise.

IMPLEMENTS AND RAW MATERIAL.

The manufacturers of implements have been almost uniformly fortunate in their purchases of merchant steel and other raw material used in the production of implements. Their rule has for many years been to purchase in large quantities and to purchase in advance. This year, while it has not been an exception, has brought out fewer large orders than usual, for which two or three specific reasons are assignable, viz., last year a craze blinded the best judgment, and the lesson learned is being applied this year. Second, prices are still declining and manufacturers wisely buy cautiously on a declining market. Thirdly, a spirit of conservatism has manifested itself among implement dealers which manufacturers and wholesale jobbers are obliged to recognize.

A month or so ago three or four immense orders were placed for merchant steel and other material used in implement factories, which represented the accumulated requirements of a number of firms for several months to come. The sudden rise in price of certain steel from 90 cents to $1.30 and $1.40 has checked the placing of orders by other manufacturers, but from inside information just to hand it can be said that concessions have been ordered, and that perhaps by the time these words reach our readers considerable additional business will have been transacted in placing orders for raw implement material. The same applies, though not with equal force, to hard wood supplies, as manufacturers are not altogether satisfied that bottom prices have been reached in lumber. From private information from manufacturers of steel at Pittsburg, and of lumber in Michigan, Tennessee and Texas, it would appear that still lower prices for steel and lumber are within the range of reasonable probabilities, though war and railroad construction may increase prices.

Manufacturers have pursued a fairly conservative course during and through the panicky times growing out of advancing prices. In some localities stocks of implements have not been reduced to the desired and customary level. The suspensions of activity within the past three months were wise. The present situation of the implement industry may be characterized as satisfactory and as vigorous as healthy agricultural conditions could reasonably demand.

Mr. V. E. Morrison, of the Morrison Manufacturing Co., Fort Madison, Iowa, U. S. A., has recently returned from an extensive tour through the British Isles, the continent of Europe and Egypt, whither he went about a year ago, for the double purpose of seeing the country and visiting their foreign connection. He found that there is a very decided interest in American manufactures, which is growing rapidly.

FILLING ORDERS PROMPTLY.

Favorable comments are being constantly received by American exporters because of the prompt delivery of goods ordered for export. The promptness of dispatch is a feature of American character and is as much a part of the business as the making of the goods. Foreign buyers can always rest secure in the conviction that every resource of counting room and factory will be exhausted to start the goods ordered on their way. The speed made is never made at the expense of quality. The machinery is already running, and it is only a question of putting the raw material through it and connecting and adjusting the parts. The secret of all is system, and interchangeability of parts. Then the American stock-room or yard is always filled, or at least well supplied, with raw material—a feature of management which has everything to commend it.

ASSISTANCE TO BUYERS.

The foreign trade is very critical in its selection of goods and implements. Dealers abroad have developed an acquaintance with the merits and demerits of American implements, tools and machinery, their strong points and weak points and their elements of suitability, which is a credit to their intelligence. They read the best export journals, they become familiar with advertisements, and they frequently supplement their knowledge by personal correspondence, as the letter files in our office will show. Our duties to our advertising patrons may be legally and morally complete by publishing their advertisement, but "The Export Implement Age" never regards its obligations to advertisers complete while it has an opportunity to speak or write a good word in reply to special inquiries as to this or that product. Where there are many of the same sort the published catalogues render all necessary aid. Our advertisers, in cases of this kind, are composed of the most reliable manufacturers in this country.

There is a remarkably strong desire among European and South American agencies to know all there is to be known as to the relative merits and demerits of all the particular machines and implements they handle, and that are to be handled, and this lively desire affords "The Export Implement Age" opportunities to render its patrons a valuable service outside of the narrow confines of an advertisement.

TARIFFS AND IMPLEMENTS.

The United States puts no tariff duty on agricultural implements. The world can send its implements to America in competition with our manufacturers. Strange to state, however, the manufacturers of Europe make no attempt to compete with American manufacturers in the United States, although they can meet on common ground and equal terms. The reason is that the American goods cannot be surpassed in quality, nor can other countries sell lower. America, however, sends her agricultural implements to all countries, tariff or no tariff, and trade increases every year at a rapid pace. The United States and Canada join, only an imaginary line separating them on portions of the boundary. Canada protects her implement manufacturers with a duty, while implements from Canada can come into the United States free.

Let us look at the results. Why does not Canada sell to the United States her agricultural implements and machinery with a tariff in her favor and discrimination against the United States? Despite protection in favor of Canada the manufacturers of the United States have branch houses in all of her leading farm centers, and Canadians find that they can buy their implements from the United States to advantage. This fact demonstrates that even a tariff is no protection against better and cheaper goods, for if the American implements were not of the best they could not pay duty and compete with Canadian makes in Canada.

Canada is a great and growing country and her manufacturers and people are progressive. Her tariff on implements simply taxes her farmers for the benefit of her manufacturers, as her farmers can buy implements from the United States cheaper than at home if the government will allow them to do so, for even with the tariff barrier the Canadian farmers find it advantageous to even break the barriers and pay the duty in order to procure cheaper and serviceable implements.

There are almost no imports of agricultural implements into the United States, yet manufactures from every country in the world can come in free of duty. It demonstrates that no country can surpass the United States in the manufacture of farm implements. The raw materials, skilled labor, and fuel are here. The goods are made at the lowest cost, and combine strength, durability, efficiency and excellence of finish.

America believes in fair play and friendly competition. Her doors are open to her European competitors. She only asks the same friendly recognition at their hands.

AMERICAN BUSINESS CONNECTIONS.

American manufactures have met every practical test as being excellent for any service anywhere. American machinery has been favorably received wherever it has been sent, and wherever used the demand has been created for more. Where there has been no demand, the demand is being made by practical methods showing the real business worth of the American product. Therefore, since the permanent trade abroad of American makes is established, it is for the foreign dealer to provide for himself in the business and sell American goods.

THE COST AND THE SERVICE.

The reason why European and other trans-ocean dealers in and advocates of American agricultural implement machinery find it imperatively necessary to keep in touch with the best sources of implement information, and in touch with manufacturers and jobbers, is that there are constant changes in methods of manufacture, involving cost and efficiency. On one hand is a constantly cheapening process, on the other a constantly improving process, whereby a given sum of money secures a better implement in some particular or other.

In many of our implements and machines the differences are infinitesimal and valueless, from the buyer's standpoint, and even from the farmer's view. Illustrations of this abound everywhere, but it sometimes takes a season's work to show the greater amount of work, or the better and more profitable work that this machine will accomplish over that one. Take even the disc plow. How long was it before the arrangement of the disc got just right, and just what sort of soil in which it would do the best work? The potato digger had to be made over and over a dozen times before it was considered fit for work. Take any implement, even the very best, and the everlasting genius of man will not let them alone. He undertakes everything, from a churn to a harvester.

The implement manufacturer is doing something better to-day than yesterday. The difference may be minute; it may amount to saving only one potato a minute, or in five minutes, but in digging a ten-acre field, the digger that does the most work will turn out much the larger number of marketable potatoes. The corn planter that can plant the grains just so deep every time may save time. Corn may be cheap, but that is no reason for buying and keeping a planter that will waste grains. Take any implement, multiply its defect per minute by 600 or more minutes per day, 3,600 or 4,000 minutes per week, and then estimate the loss the poorer or less serviceable machine amounts to. It would surprise the average farmer who never stops, perhaps, to observe and count up the cost he has to pay for not having the very best and most serviceable machine.

The point for our friends beyond the seas to keep in mind is that while a plow is a plow, and a digger is a digger, and a harvester is a harvester, and nothing more, yet that a harvester which harvests an acre per day more than another means a good deal in cost of production.

Apply the princip. Multiply the advantage of a better machine over a good machine per hour by the number of hours it may work in a year, and multiply that by the number of years it is expected, or ought, to last, and you have a difference in results as measured by dollars made or saved, which is the strongest possible argument in favor of observing what is referred to in the opening paragraph of this article, though it applies with equal force to farmers of all countries as well as to those of the United States.

HEAVY AMERICAN EXPORTS.

Exports of American tools and machinery do not show the shrinkage in volume which recent reports would indicate. Some concern has been expressed by leading export houses by reason of a falling off in foreign orders due to the high prices of iron and steel. In this connection it will be interesting to note that the exports of builders' hardware, saws and tools during the fiscal year 1900 were the largest in the history of our export trade, being $9,646,017, against $7,842,372 in 1899; $6,627,466 in 1897, and $5,509,188 in 1896, prior to which year the exports in this line had never aggregated so much as $5,000,000. In exports of sewing machines, typewriters, electrical and other intricate machinery there are also gratifying increases. Comparing the export figures of the fiscal year just ended with those of 1898 and 1899, it is found that sewing machines increased from $3,136,364 in 1898, and $3,264,344 in 1899 to $4,540,842 in 1900; electrical machinery, from $2,052,564 in 1898, and $2,736,110 in 1899, to $4,328,917 in 1900; locomotive engines, from $3,883,719 in 1898 to $5,592,403 in 1900; typewriters from $1,902,153 in 1898 to $2,697,544 in 1900; metal-working machinery, from $4,618,683 in 1898 to $7,193,390 in 1900; and all other machinery from $13,336,930 in 1898 to $21,913,202.

While the chief market for United States machinery is still to be found in European countries, an increasing proportion is being sold in the Far East, especially in British Australasia, Japan and India. In 1898 our exports of builders' hardware and tools to British Australasia amounted to $877,635; in 1900 they aggregated $1,325,793; in 1898 our exports in this line to Japan were $76,500, while in 1900 they were $106,251. Our exports of typewriters to British Australasia in 1898 amounted to $60,039, while in the fiscal year 1900 they were $101,002; to Japan the exports of typewriters in 1898 amounted to but $4,220; in 1899 they had increased to $7,262, and in 1900 to $16,579, of which sum $2,211 were exported during the month of June alone, thus forecasting in some degree the possibilities of future development in this article of export. Commenting upon the increase in exports of typewriters, a prominent American manufacturer is quoted by the New York "Commercial" as saying:

"The total imports of merchandise into the United States during the fiscal year ending June 30th, 1900, were $849,714,670, while total exports of merchandise from the United States were $1,394,186,371. The principal features of the report are thus summed up:

"Four great facts characterize the foreign commerce of the United States in 1900, the closing year of the decade and century:

"1. The total commerce of the year surpasses by $319,729,250 that of any preceding year, and for the first time in our history exceeds two billion dollars.

"2. The exports exceed those of any preceding year, and have been more widely distributed throughout the world than ever before.

"3. Manufacturers' materials were more freely imported than ever before and formed a larger share of the total imports than on any former occasion.

"4. Manufactured articles were more freely exported than ever before and formed a larger share of the total exports than on any former occasion.

"In exports every great class of articles showed a larger total than in the preceding year; in imports every class except manufacturers' materials showed a smaller percentage of the total than in the preceding year, while manufacturers' materials showed a much larger total and larger percentage of the grand total than in any former year."

THE WONDERFUL PROGRESS IN RAKES.

One of the most interesting features of the agricultural implement business is the evolution of the rake, from a stick with a crooked end to the present masterful stroke of mechanical genius, that almost talks as it glides through its work. One of the foremost mechanical experts in agricultural machinery, when recently asked what is the next step of progress in the rake, said "to sell a rake to every farmer that needs one." It would appear that skill, ingenuity and expertness had exhausted themselves in perfecting this highly useful implement. European agriculturists have always admired the American rake for its extreme lightness and the thoroughness with which it does its work. The struggle among rake manufacturers would make quite an interesting history. The present masterpieces represent a thirty-years' struggle of skill against skill, of gradual evolution, of refinement upon refinement, until the rake of the past few years appeared, ready for every condition of crop and able to meet every exigency that presents itself. Its instant changes, its automatic action, its adaptability to rough land, its various combinations, all converge in a degree of perfection which leaves nothing to be desired. But to-day there are scores of eager eyes and brains watching the rakes of this and other countries as they perform their work, to detect some latent defect and to anticipate some little improvement. We agree with the mechanical expert, for the thing to do is to sell rakes, and the farmer who uses an old make in preference to one of the newest may not be doing the best thing for his interest in the end.

MACHINES FOR PREPARING FOOD FOR STOCK.

Railroad engineering managers, manufacturers and steam users generally, know what a difference there is in the way coal is thrown into a furnace to make steam. Some waste from 10 to 33 per cent. of coal by careless firing. Stock raisers of late years have learned to give a little more attention to correct feeding of stock and to avoid careless or overfeeding, which is just as important to profitable stock raising as correct coal firing is to economic steam production. The improvement in cattle feeding machinery (some illustrated specimens are now on our table) show that the progress made is along scientific lines and not at random. Improperly prepared feed represents a certain loss. The stomach of an animal is simply a chemical machine which the stock raiser uses to transform feed into beef, just as a steam user uses coal and water to create steam in a furnace or locomotive firebox. The preparation is important. The steam user uses coal with a minimum of sulphur and ash and water free as possible from impurities. But it was a long time in the history of cattle raising before the value of properly prepared food was recognized. Improperly prepared food uses up stomach power and reduces the meat-making power of the machine. Careful study has been given to these requirements, and machinery is now provided at relatively small cost which enables the farmer to get the most out of his feed in beef. Besides, properly prepared food fattens faster and makes better beef. The attention of foreign stock growers, where food is a much greater item than it is here, is called to this class of machinery, which includes feed grinders, hay and straw cutters, ensilage cutters, boilers, root pulpers and other contrivances adapted to preparing foods for stock.

BETTER AGRICULTURE.

One of the impulses now at work in agricultural interests is more scientific farming. This tendency was originated and since stimulated by the high development of implement making. Splendid implements demand scientific farming, and the progress made in this direction, especially in the Northwest, is truly encouraging. The awakening on this subject is also due in a measure to our agricultural colleges, but the greatest impulse is yet to come—is now in sight. The turning point is due to the enormous growth of our export trade, and to the narrowing down of the available limit of fertile territory. The next ten years will develop more scientific farming than the past fifty.

METAL WHEELS.

The governing use of metal wheels for farm implements is warranted by the economies resulting. Foreign agents find those implements preferred which possess this element of greater durability. The farmers abroad, who have been using implements and machinery with metal wheels, are surprised at the endurance given. The manufacturers of metal wheels are pleased with the recognition which foreign tillers of the soil have given to these progressive devices. Wagons are now appearing with steel tires and all metal wheels. There is no limit to the application of metal wheels, and the opening European and South American demand is largely increasing.

ENGLISH TRIALS OF IMPLEMENTS.

At the English fairs considerable attention is given competitive tests of plows, cultivators, etc., in the field, a practice which does not educate the farmer nor promote harmony among manufacturers.

Under the auspices of the Royal Agricultural Society of England trials of cultivators were held at Kexby, near York, in June. The ground selected for the trials was thistle-covered, coarse grass land, that had not been cultivated for fifty years. According to "The Implement and Machinery Review," of London, which reported the trials, deep work with spring-tine cultivators was impossible, and nearly all used four horses, while broken chains and other mishaps enlivened the occasion; finally five of the implements were drawn through the ground by a traction engine. The ground surely was not suitable, or the trial gave no evidence of the superiority of the cultivators if under more favorable conditions.

One of the prize winners was of a type in use thirty years ago. Granting that the judges were impartial it seems strange that with all the great improvements made in cultivators since 1870, the modern ones were forced to the rear in a competition with one which may be said to be out of date. It is possible that the English cultivator of 1870 was an exceedingly strong and heavy affair, but it was demonstrated that the power required to perform the work was costly. The cultivator used four horses, but did not pulverize the soil. Even if such a field had been worked over the soil would not have been in fine condition for a crop, and if a test of "strength" of implement only was required it would not have been difficult to any American manufacturer to win if such was wanted, but when the cost of reducing the soil on such a field is greater than the value of the crop, it is anything but economical to use cultivators for such purpose.

The object in using an implement of any kind is to secure the greatest amount of work in the shortest period of time and at the least cost. There is no necessity for compelling the use of four horses when two or three will accomplish the work, and it is expensive to haul twice as much weight of iron over a field as is necessary to give strength to the machine.

While on some farms the ground may be broken with such designs of cultivators as were used in the trials near York, yet such a piece of land as the one described could more economically have been broken up with a plow. It demonstrates nothing to put cultivators of any kind on such fields, as the conditions attending the test may never again be met. The object of field trials should be to educate the farmer. If this is not done then the effort is a waste of time and an expense.

The judges threw out implements at the trial without allowing them perform the service desired, yet on a piece of land that may be fit for the purpose of a trial the improved cultivators would no doubt have shown that it is not essential to use four horses or a traction engine to do the work, while the implement that belongs to the period of thirty years ago would probably have been almost out of place compared with the others.

We do not believe that a cultivator of a pattern of thirty years ago is superior to one that is modern, hence the trial at York either demonstrates that there are no improvements or that the methods of cultivation have not changed. We believe that England is progressive, and we do not accept the decision of the judges as deciding anything of value to the farmers.

OUR EUROPEAN COMPETITORS.

The "Export Implement Age" desires to make it known that in its endeavor to enlighten the peoples of all countries regarding the excellence of United States agricultural implements not a single word has ever appeared in its columns disparaging the manufacturers of Germany, France, England, or other countries. We do not believe in that kind of competition nor favor such journalism. Europe has enterprising manufacturers and intelligent farmers. They have for generations understood one another, are good judges of what may be required, and the United States manufacturers step forward and enter the field of competition with only the best wishes for one and all.

The great advantage claimed by the American manufacturer of agricultural implements is that he is forced by the natural advantages of his country, and the desire of its farmers for using labor-saving implements, to be ever on the alert to improve. There are about 200 factories, great and small, for manufacturing implements, machinery, and vehicles, in the United States, and unless progressive the manufacturer will fall to the rear and be left by the wayside. Every year the manufacturer learns more.

The United States manufacturer believes that the merchants and farmers of Europe are, like those in this country, progressive and intelligent. He also believes that European farmers prefer as good as can be used in America, and he sends his manufactures to Europe in order to have them used and tested on the farms by the side of those made in Europe, trusting to the intelligence of the farmer to judge for himself of that which he may require for his soil and climate.

It may be safely claimed that everything is grown in the United States that is cultivated, including the grains of the North, the orange, fig, olive, and date of the tropics, with the apple, peach, pear, prune, grape, and the numerous vegetables of the temperate zone. Wheat, rye, oats, maize, buckwheat, barley, potatoes, beets, cotton, rice, hemp, flax, and the various grasses are special crops. These varied productions demand implements of all kinds, and they, in their way, compel also the use of the windmill, feed grinder, chaff cutter, horse power, gasoline and engine power, etc. There is not a plant grown in any country that cannot be cultivated or harvested with an implement of American make of some kind.

And not only will the European farmers find something in the lines of American implements particularly suitable, but the farmers of Asia, Africa, Australia, and South America cannot make a mistake in calling upon the United States manufacturer to supply them with durable and improved implements. Everything that is wanted in any country is manufactured in the United States.

Let it be understood that the United States manufacturer believes that the merchants and farmers of other countries are inviting him to come and offer his wares. The United States has no tariff on agricultural implements, and any European manufacturer can come in, free of duty, to compete. The American does not fear competition. The markets of his own country for implements are open to the world, and he goes to other countries with friendly competition, knowing that he will be welcomed, and that if his wares are meritorious he can sell them to all desiring.

DISTRIBUTING THE FACTS.

The mission of the "Export Implement Age" is twofold: To acquaint the people of all other countries with the great value of American agricultural implements, and to increase the sale of American implements by systematic effort. Many farmers abroad know what American implements are, but vastly many more do not. With the coöperation of exporters here and dealers abroad it is proposed to reach, as fast as possible, the unnumbered millions of other countries who know only in a vague way of America and what American agricultural implements are. On the surface this may look like an easy task, but it is to be remembered that foreign peoples are progressive and that they must have America and American implements made fully known to them. But already wonderful progress has been made. The world has formed the reading habit, and type is the instrument to open the way for the dealer and agent. The grand educational movement has set in, and it needs only the persistent coöperation of American implement makers to obtain a very large share of the trade which is within reach of those who have the patience to follow after it.

EXPORT IMPLEMENT AGE

FOR CIRCULATION IN FOREIGN COUNTRIES ONLY.

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Under no circumstances do we allow commissions to advertising agents.

Fast trains and fast vessels have annihilated distance. It is now "how many hours" to any point.

American women do not labor in the fields. The men do all outside work—with labor-saving implements.

Every American manufacturer makes a specialty of promptly filling orders. He understands the value of time.

The heavier the machine the more money one must invest in it. It is not always wise to put capital where it cannot quickly be realized.

Buy for cash and save interest. Never give credit if your note is in bank, as your dependence upon your debtor may cause your downfall.

No reliable American manufacturer of agricultural implements allows a machine or implement to leave his factory until inspected and tested.

Freights from America to Europe are cheaper than from some cities to others by railroad. Yet railroad freights in the United States are also very low.

In the United States the street number is not always important. Letters addressed to our advertisers as given in the advertisements will always reach them.

The great increase in the volume of money in the United States during the past twelve months promises to give an impetus to business next year in manufacturing, agricultural mining, commercial, and export which will be reflected in all business channels.

An English pound is a little over half a kilogram. In America the pound is used to designate weights.

The auto-mower (a mower that is propelled without the use of horses) is already offered by American manufacturers.

When we speak of "America" in this journal we refer solely to the United States of America, as it is a shorter term, and is understood by all.

Do not fail to write American manufacturers for what you want, and be explicit in details, as they are as anxious and willing to comply with your desires as you are to receive the articles.

The dealers in American agricultural machinery in Turkey should quickly prepare to take advantage of the fact that large quantities of American railway and construction material will be shipped to Egypt during the next year or two, and that the vessels carrying it will stop at Turkish ports, thus opening more shipping facilities to Turkey dealers who buy in the United States.

The future of the American implement industry will be affected to a large degree by the volume of our export trade. It is expanding with wondrous rapidity. The total average exports of agricultural products for 1895 were $558,000,000 in round figures, and for last year, $793,000,000. For the coming fiscal year the agricultural exports will reach, so it is estimated, not less than $900,000,000, and they may touch $1,000,000,000.

American plows have long since overcome the last glimmer of prejudice for their lightness by all who have used them. Lake Superior iron ore, the richest ore in the world and the freest from impurities, is the secret of American lightness, because it takes less iron or steel to perform a given service. Exporters are shipping double quantities of plows and plow material this year to their old trade and are finding new territory voluntarily opening up.

In Europe the number and street, as well as the name of the manufacturer, is given. In the United States is is not always necessary to give the number and street, but the "State" should be mentioned after the town or city, thus—"John Smith, Philadelphia, Pa. (Pa. meaning the State of Pennsylvania), United States of America," as the United States is composed of many States, each having its own government, united as one country. For instance, there are 23 post-offices in the United States known as "Lafayette," but no two post-offices of the same name are in the same State.

Merchants are in business to make profit. It is business to handle and sell what you can turn into money. It is the wisest business policy to handle the goods that are most in demand and that sell the easiest and quickest. It costs less to handle and sell the best goods because the demand is for them.

All those interested in the export trade on either side of the water owe it as a duty to themselves, and to their reputations as foresighted business men to keep posted on the progress of the implement industry, for that matter throughout the world, but especially in the United States. The man who goes asleep now had better leave business. Intelligence is at a premium. Business men have simply got to know. They must read, watch and have a fund of carefully garnered information at their command.

The "Export Implement Age" is adding zealous friends to its subscription list from all over the world—friends, who are friends, because the "Export Implement Age" is fighting their battles, and broadening their field of business opportunities. Our private letter files are full of encouragement and endorsement. It is our purpose to more and more fully merit the confidence of implement exporters, importers and users all over this busy world, by publishing a journal that will bring money and trade to them and light to their commercial pathways.

The interest which farmers are taking in dairy products means a great deal to the manufacturers of dairy supplies. The growth of population, the rise of cities and towns throughout the regions heretofore devoted to agriculture, the increasing demand abroad for American dairy products, all help to increase the demand for those products in accelerating proportions. The mechanical appliances for dairy requirements are yearly improving, and the opportunities for profitable development of this interesting adjunct to agriculture are widening. The next step will be the application of electricity to dairy work upon a large scale.

South African trade promises to bring a good run of agricultural orders to the United States. Cape Town is about to expend $250,000 on an electric road. Ladysmith is about to put in an electric light plant. A number of South African towns are preparing to bond themselves for public improvements. Specifications are being drafted for an immense amount of mining machinery. American firms have been consulted and are expected to furnish equipment. All this means the opening up of opportunities for the sale of American implements. Here are opportunities for a few pushing men.

There is no tariff duty in the United States against implements from other countries. The whole world is invited to come and sell us implements, as our manufacturers fear no competition.

The American chilled plow has received perhaps more study than almost any other implement, and to-day its high excellence has made it known in almost every country on the globe. Their points of excellence are obvious, and European importers of American agricultral machinery can make no mistake when they buy an American chilled plow.

Those who are prominent in pioneering the introduction of American agricultural implements abroad are engaged in a missionary work which has for its end the benefit of the masses of the people. They are inviting the wealth producers of the world to double and quadruple the results of their toil and to step onto the broad platform of activity, built on American lines.

The line of American grain seeding machinery covers a wide range. The drills and seeders are fine specimens of mechanical skill. No understanding is possible without catalogues. Recent improvements have been made which call for the attention of the exporter. They can be made in very small size, if required. Some very neat and serviceable drills are 6-row, and are made in hoe, shoe or disc styles.

A careful study of several recently issued American catalogues of harrows show that he who invents a new point of excellence will be truly a genius. We refer especially to the disc harrows. Their ball bearings and light draft and the arrangement which keeps the discs covering an even depth are two or three of the good points of some well-known makes. The disc harrow has a deservedly wide reputation.

War is making unusual demands upon the United States. The steamer Tyr left Portland, Oregon, September 18th, for Vladivostock with 29,000 barrels of flour, 500 cases of firearms and ammunition, and 100 tons of provisions. Another ship sailed a few days later with 50,000 barrels of flour. Agents of the Russian government are buying up oats, barley, provisions and lumber on the Pacific coast.

Well-drilling machinery has come to be at times an important article of export. To dig a well cheaply and with the least expenditure of power and least bulk of equipments are points the practical well-borer has to keep in mind. The losses and delays incident to breakage of parts are frequent enough when buyers are not careful from whom they buy. There are American makers of well-drilling machinery whose guarantee is absolute and whose workmanship is known all over the world.

The value of agricultural implements exported for seven months, 1900, to August 1st, is $13,135,119 against $10,508,725 for the same time last year. This is the largest item on the list of manufactured products. The item of miscellaneous machinery exceeds this amount a trifle, but the agricultural implement industry proper leads all others. Copper exports and refined oil, of course, run far ahead. This position of the implement industry as the leader in the export trade is gratifying.

The exports since January 1st of shovels, spades, scoops, forks, hoes, rakes and farm and garden tools, adapted to every condition and to all countries, are of such magnitude and frequency as to warrant the statement that these American products are rapidly gaining headway over some competitive makers in other countries. The steel used is excellent, as all American steel is, and the methods of stamping and the putting together of these tools give them a serviceability that cannot well help but make them a favorite in all foreign countries where they are known.

The degree to which farmers have of late years found it profitable to depend on pumps has brought out a variety of makes, which calls for intelligent care on the part of buyers, particularly where a special service is required of it. European agents and American exporters can consult our pages to advantage for artesian well pumps, centrifugal pumps, rotary, spray, hand and windmill pumps. There are some makes which can be taken apart and packed in small space, which are adapted for shallow or deep wells, that can be adapted for hand or windmill use, and valves can be fixed without taking up the pump or getting down in the well. Our American makers are prepared to meet any possible emergency.

Farmers often are progressive and foresighted in many things, but by overlooking one or two essential features in farm management lose necessary economies. This remark applies with some force to baling. There are not a few farmers, both at home and abroad, who, because they cannot keep their press busy a long time, consider it too expensive. But with hand, horse or steam power machines there is room to choose. A baling press is a necessity. Some of the bailing presses on the market are deserving of confidence. They are well made, always ready for use. Save time and space and loss, and ought to be a part of the equipment of every progressive farmer at home or abroad.

There is a class of machinery in which American manufacturers peculiarly excel, viz., wheat and barley scourers, separators, fan mills, corn shellers, coffee cleaners, separators and graders, grain and seed cleaners, and threshing machines. To our European, Australian and South American friends we would say that if our advertising pages do not, with the assistance of the available catalogue information, give them sufficient acquaintance to purchase wisely, it will afford us pleasure to supplement this information privately. American workmanship in this field is especially meritorious, and the newest mills are particularly deserving of the attention of those who are anxious to please their customers best.

The plow industry of the United States has grown to mammoth proportions. While a plow is a plow, there are differences enough to make it worth while to know something about the leading plows in the market, and which information can be found in the advertising pages of this journal. The reputation of our plows in foreign countries has been well earned, and is lasting. There is no requirement of the foreign trade which cannot be met as thoroughly as the requirements of our home farms. The facilities of our shops are complete, and the experience of our manufacturers cover every possible need. European agents will be promptly assisted by every means in our power to become fully acquainted with the American plow, which also includes gang plows.

America in the earlier years of its wonderful agricultural development was quick to recognize the value of windmills, and ingenious men were soon found who set the wind to work. Almost absolute perfection has been reached in windmills, and sorry would be the plight of thousands of American farmers were they not aided by their ever-ready service. It would be a great advantage to many European farmers, as well as farmers and stockmen in South America and other countries, to have the aid of a windmill. The peculiarities of different makes should be understood by intending buyers. There is hardly any limit to the services which they can perform. The windmill literature of the United States is very entertaining as well as instructive. To such agencies in foreign countries as can develop trade in this direction every facility will be extended to obtain full details.

RESULTS OF THE PARIS EXPOSITION.

The practical results of the Paris Exposition will soon now begin to be felt. Visitors who went there for business from all over the world have practically made up their minds what they want which they saw there. From private sources we have learned that there were more people there interested in agriculture than at any former European exposition. This is but natural. European agricultural conditions have been practically revolutionized within a few years. American competition has become a factor.

At Paris all the world has shown its best and all the world has been there to see. The agriculturists of the world saw what America had to offer and admired its genius. American implements were examined, studied and compared by the importers and exporters of the world, and by the great leaders of trade who direct and influence if they do not control.

And what is the outcome? American implement manufacturers are not yet prepared to answer. That their work has commanded the admiration of all who have seen it is admitted. That Americans have taken 2,000 prizes attests the standing of their handiwork.

The Paris Exposition constitutes an epoch. It showed America to the world. It made clear **and** made certain what was before doubtful, or at least not firmly established.

As to the outcome none can doubt. The cities all along the Western hemisphere being lighted with electricity generated by American machinery; the workshops of Europe are adopting much American machinery. This is said in no boastful vein. What is there to arrest the tendency of the tillers of the soil in all lands to adopt American implements brought to them by the master minds of the world?

The Paris Exposition, as soon as the seed planted there generates, will open a market for American implements. This opening will be facilitated by their cheapening cost, by the ship lines whereby these products will be carried abroad, and by the demand which is now expanding for the products of the fields.

American agricultural implement manufacturers seek trade in foreign countries to a greater extent than any other manufacturers in the United States. They not only create a demand abroad for their wares, but also compel export commission merchants never to substitute one maker's goods for another irrespective of price. In many parts of the world where regular exhibits are held in behalf of agricultural progress there are sure to be American implement exhibits. The report of Mr. Hughes, United States Consul at Coburg, shows how well American makers of agricultural machinery were there represented, although the fair was only opened for two days during June last. In part the Consul says: "There was the largest and best exhibit of American agricultural implements, etc., ever seen in this part of Germany. The following well-known firms were represented: Milwaukee Harvester Co., Wisconsin; McCormick Harvester Co., Chicago, Ill.; Deering Harvester Co., Chicago, Ill.; Plano Harvester Co., Chicago, Ill.; D. M. Osborne, Auburn, N. Y.; W. A. Wood Harvester, Hoosick Falls, N. Y.; Champion Harvester, Chicago, Ill.; Buckeye Harvester, Akron, Ohio; Acme, Pekin, Ill.; Worcester Buckeye, Massachusetts, all of the United States. Adaptability to the needs of the district where an article is sold is an essential element of success. An American exhibitor of binders and mowers at the Frankfort show in 1899 had a very simple tool sharpener lying unnoticed for some time. It happened to attract attention, and dealers crowded round to see its practical work, with the result that hundreds were ordered from all parts of the country. It is well known in Europe that where first-class American agricultural implements are once well introduced the people are very favorably impressed with them.

The introduction of American mowers into Europe, a good many years ago, was a revelation to many. They have become a familiar sight in all hay-producing countries, and are now sought for in preference to mowers of all other countries. Simple as it is in construction it has received a great deal of attention from inventors and mechanics. This is evident when we recall the mowers of thirty years ago and now. The American mower is a triumph of genius, because it does its work with ease and without loss, leaving a clean, close-cut field behind. Our great plants are reaping the reward of thirty to forty years of earnest mechanical and commercial effort to build up an implement that is the right and left hand of the farmer. America gave the world the reaper and mower and she has improved her machines every year.

THE BINDER AND LABOR.

Mr. James Edwards, in the "Journal of the Royal (English) Agricultural Society" gives some excellent facts regarding grain binders, which has also been reproduced in the "Agricultural Engineer," of London, from which we take the following:

"The exact economy effected by using a binder must be reckoned by every man for himself. Harvest wages may vary to considerable extent in different parts of the country. In the north, woman labor is largely available, with boys to make bands, but the adult male labor is correspondingly dear. It may be said roughly that the binder will displace seven harvest hands, and this may mean anything from a pound to thirty shillings a day. As has already been stated, however, the difficulty at the present time may be to get manual labor at any price, and when this is the case, and the corn is waiting, who shall assess the value of a machine that will render the farmer to some extent independent of harvest hands? In this connection it may not be out of place to quote a passage from the report of the late Mr. John Coleman on the trials of sheaf-binders at Bristol (Vol. xv., 2d series, 1879, p. 108):

"'The time is coming, if it has not already arrived, when English farmers must have recourse to labor-saving machinery; and enough has been done (1879) to show that practical efficiency has been obtained. In our Colonies, especially Australia and New Zealand, American sheaf-binders have been largely introduced, and I am informed on credible authority that in certain parts of New Zealand the land has doubled in value in consequence.'

"If a man like the late Mr. Coleman, who thoroughly understood this subject, so wrote twenty years ago, with how much more force do his words apply now! We are, indeed, all well aware that anyone who has corn to cut should use a binder if possible."

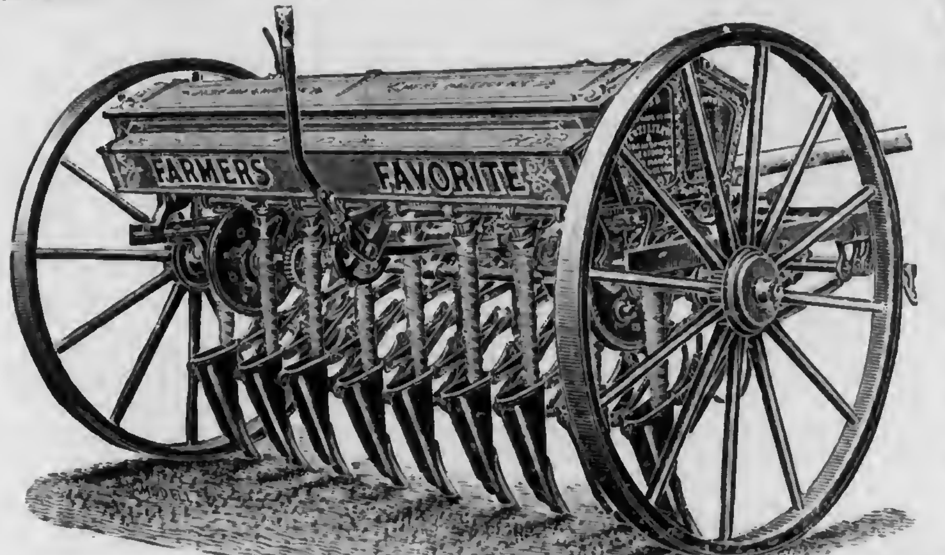
As the above refers to nearly one-fourth of a century ago it shows that American manufacturers were pioneers, but at the present day they have made many great improvements, and the cheapening of the cost of the product by the use of labor-saving machinery cannot be evaded if a profit is expected.

THE IMPLEMENT MAKER.

Napoleon once said that every square yard of land reduced from a state of nature to a state of cultivation broadened the foundation of civil liberty just that much. This sound, economic truth can be paraphrased by saying that with the manufacture of every additional implement there is added to the superstructure of our world-wide reaching civilization a stone that lifts it that much higher into the sunlight. In earlier days the tool was the symbol of industry and progress, but the tool has now lost its identity in the mighty machine that moves its thousand arms to toil for man. But the implement remains; it is wielded and used by the individual and it is his companion and agent.

The implement of to-day, in its magnificent and watchlike niceties of construction, is the measure of man's progress from the infancy of racehood to the present. A great thinker once said: "Show me a people's songs and I will show you their progress in wisdom." Better might he have said: "Show me with what aids the people tempt the fruitful soil to yield of its abundance and I will show you what has been their progress from barbarism to refinement."

The agricultural implement maker stands close to the heart of humanity. He appeals to the individual to the desire to advance, to the spirit of industry, to hope and ambition. He is the genius of our civilization, the pioneer of true and abiding progress, and the arbiter in the great make-up of our destiny for good in the onward march of all peoples to our ultimate aim and end.



"TIME IS THE TEST OF MERIT"

A MATTER OF BUSINESS

We have no extravagant promises to make either the dealer or the farmer. We have no elaborate adjectives to shower on our drill. It's a simple business proposition we make the dealer. We believe that the 50 years' experience and reputation we put into our

Farmers' Favorite Steel Drill,

the care and attention we put into its construction, have resulted in one of the most satisfactory pieces of machinery ever put on the market. We know farmers are pleased with them, and dealers are gratified at the ready sales. We have a money-making proposition and would like to discuss it with you.

The Farmers' Favorite—All steel. Lightest draft. Wheels with roller bearings. Axles and rock shafts cold drawn steel. Grain tubes or conductors entirely of steel and indestructible. Front lift. Spring hoes. Send for talogue.

BICKFORD & HUFFMAN CO., Macedon, N.Y., U.S.A.

WE MAKE DRILLS--NOTHING ELSE.

"TIME IS THE TEST OF MERIT"

Engines AND Boilers

In a variety of sizes and styles from 3 to 50 Horse-power. Specially well adapted for export trade. Good agents wanted. Catalogue with prices and full information on application.

JAMES LEFFEL & CO.,
Num. 54, Springfield,
Ohio, U. S. A.

Dampf-maschinen und Dampfkessel

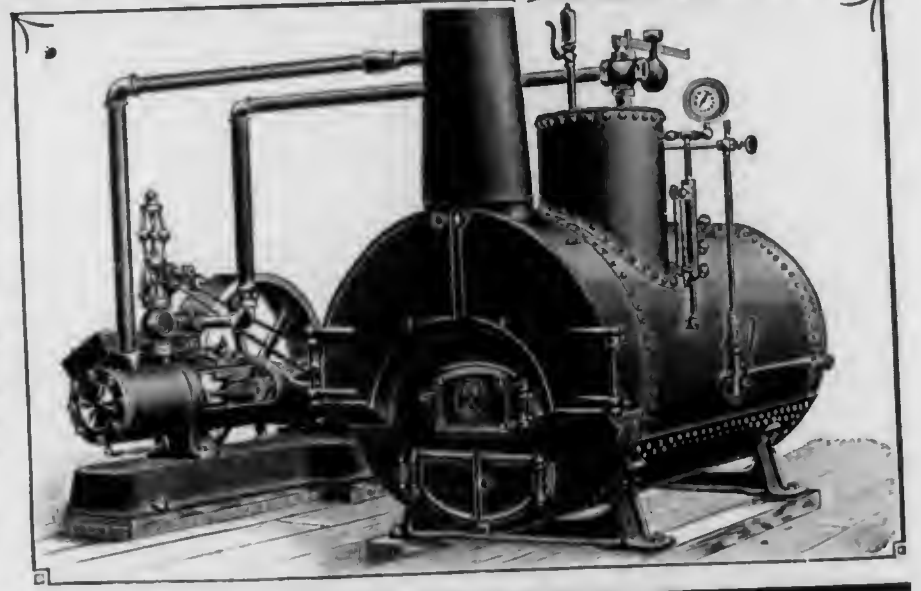
Verschiedener Grössen und Systeme, von 3 bis 50 Pferdekräften; beste Bezugsquelle für Exporteure; tüchtige Vertreter gesucht. Kataloge mit Preisangaben und ausführlicher Beschreibung auf Wunsch kostenfrei.

JAMES LEFFEL & CO.,
Num. 54, Springfield,
Ohio, U. S. A.

Máquinas de vapor y Calderas

de todos tamaños y formas desde 3 hasta 50 caballos de fuerza, especialmente adaptadas para la Exportación. Se desean buenos Agentes. Catálogos con precios é informes completos, son enviados á los que los soliciten-

JAMES LEFFEL & CO.,
Num. 54, Springfield,
Ohio,
E. U. del N. A.



Three Exhibits in 1900

AND Three First Prizes

AWARDED TO THE

MILWAUKEE

GOLD MEDAL at the Paris Exposition.

SILVER MEDAL of the Royal Agricultural Society of England, at York.
SILVER MEDAL of the Peterborough Agricultural Society, at Peterborough, Eng.

SEND FOR CATALOGUE. It Describes Our Line of Prize Winners.

MILWAUKEE HARVESTER COMPANY
MILWAUKEE, WIS., U. S. A.

1400 PRIZES

The Prize awarded at the Paris Exposition this year is but one of over fourteen hundred grand prizes, medals, objects of art, decorations and awards which have been earned by the harvesting machinery of **Walter A. Wood Mowing and Reaping Machine Company.**

At Paris alone, in competition with the world, it received the grand prize, two gold medals, in 1867; also the grand prize, two gold medals and an object of art at Paris in 1878; and again the grand prize, two gold medals and object of art at Paris in 1889; the world's highest prize, the "Grand Diploma of Honor" at the Vienna International Exhibition, 1873, at the Centennial at Philadelphia, 1876, and at the World's Fair at Chicago, 1893.

Mr. Wood himself, at the Paris Exposition, 1867, received the Cross of Chevalier of the Legion of Honor, and at the Paris Exposition, 1878, the Cross of Officer of the Legion of Honor, and at the Vienna International Exposition of 1873, the Imperial Cross of the Emperor Francis Joseph, and many other decorations as tributes to the excellence of his harvesting machinery.

No other harvesting machinery can show such a world-wide, all-embracing, tremendous success in the winning of Prizes at every kind of a competition, exhibition and fair, from the country agricultural fair to the world's greatest expositions.

In view of all these tributes, it is an ordinary inference that the Walter A. Wood Mowing and Reaping Machines represent the best that the world can produce.

These prizes are all awarded on excellence, on actual merit, on the good points of each machine.

The list of prizes and premiums won by this one company alone fills a large book, which will be sent free upon request, to anyone asking for it.

In this connection we would mention some of the awards and prizes conferred and won by the Wood machines during this season: First and only award on binder, Northamptonshire, England, Agricultural Society, June 14th; only award, Stafford, July 25th; only award, August 22d, Machynlleth, Wales, 13th Annual Exhibition; First prize Mower Trial, Hasselt, Belgium, thirteen machines competing; First prize,—gold medal—on Reaper and Mower at grand field trial near Dollbergen, Hanover, Germany; First prize on Reaper at Zurawica, in Galicia, 25th and 26th of July; at Philipville, in Belgium, on the 12th of August, Reaper and Mower were each awarded first prize.

No dealer is doing himself justice who has not represented in his stock the mowing and reaping machines made by us.

Our method of helping the dealer, really helps.
It is yours if you sell our goods.
We are anxious to help you make more money as well as add to your prestige.
The sale of successful machinery like that made by us will help every dealer to increase his business.
Write for catalogue, prices and particulars.

WALTER A. WOOD MOWING AND REAPING MACHINE CO.,

HOOSICK FALLS, N. Y.

CHARLES AUSTIN BATES N.Y.

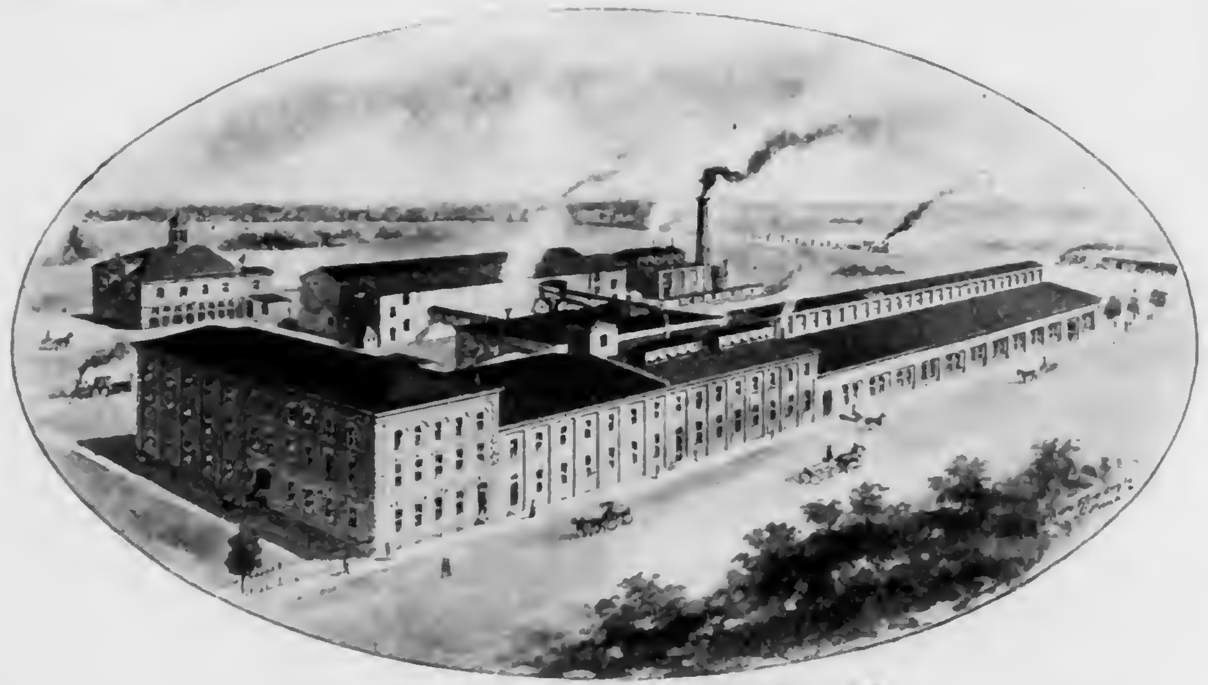
TIGHT BINDING TEXT CUT OFF

HAND, FARM AND GARDEN TOOLS.

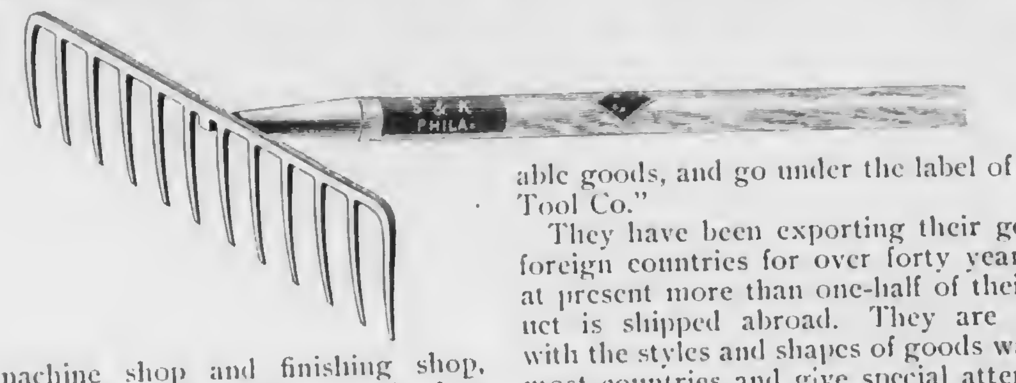
Messrs. Sheble & Klemm, Philadelphia, Pa., U. S. A., began the manufacturing of hand, farm and garden tools in the year 1850, in what was then known as the Fairmount district of Philadelphia, from which their works took the name "Fairmount Fork Works." Their business having outgrown this location, in 1856 they moved their works to Frankford, a suburb of Philadelphia, locating the same upon Frankford creek, making additions thereto as business required.

On the night of September 27th, 1899, they had the misfortune to have their entire works totally destroyed by fire. They immediately set about rebuilding upon the same site, and completed their new works, as shown in the illustration, and had the same in full operation April 23d, 1900.

In designing their new works, which occupies about three acres, they brought into good use their fifty years' experience in the manufacturing of steel goods, and according to their ideas erected their buildings in such manner to give them the best results.


Factory of Sheble & Klemm, Philadelphia, Pa., U. S. A.

The buildings are constructed of brick and stone, with the exception of the handle storage building and blacksmith shop, which are of corrugated iron. All the buildings have been planned according to the slow burning construction ideas, and have every improvement known of by expert factory architects. The works are divided into nine buildings, consisting of forge shop, polishing and tumbler shop, ferrule and handle preparing shop, handle storage building, power house, machine shop and finishing shop, stock building and offices, blacksmith shop and stable, and several of these buildings are divided into different departments.



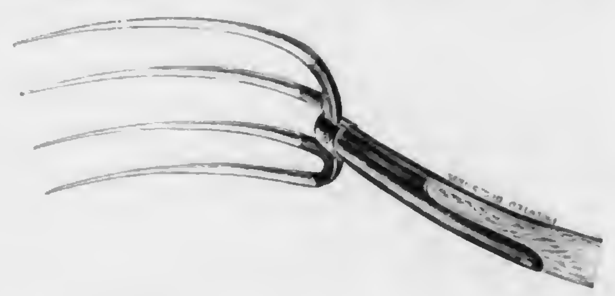
With their present facilities they are able to turn out 300 to 350 dozens forks, hooks, rakes, etc., daily, of different styles and shapes, the principal being hay, manure, spading, street, barley, straw, sluice, oyster, coke, coal, stone or ballast, tanners', cottonseed, turnip or beet forks, potato and manure hooks, garden, ballast and asphalt rakes, and many other styles for special work.

The goods are divided into three grades. The best grades have labels bearing the name of "Sheble & Klemm" with trade-mark. The second grade is made to supply a demand at less price than the best grade, and are designated by label "Pennsylvania Fork Co." The third quality is low-price serviceable goods, and go under the label of "Eagle Tool Co."

They have been exporting their goods to foreign countries for over forty years, until at present more than one-half of their product is shipped abroad. They are familiar with the styles and shapes of goods wanted in most countries and give special attention to packing and shipping to the best advantage of their customers.

They originated, and are the sole makers of, "Locked Forks and Hooks," as illustrated by accompanying cut of fork. These goods have a cap fitted over the head of the prongs and a rivet passing through the cap, ferrule, handle and head of the prongs, making it impossible for the fork or hook to work loose in the handle. These goods have a well-established reputation and are sold largely.

The illustration of steel garden rakes given is of particular merit by reason of it being made of one solid piece of steel, with no welded parts, and having the teeth straight and a back especially adapted for smoothing the surface. Asphalt rakes of this style are very desirable.



The main offices and warehouses are with the works at Frankford, Philadelphia, Pennsylvania, U. S. A., where a large stock of regular goods is kept on hand ready for prompt shipments. A stock of goods is kept also at No. 79 Chambers street, New York City, N. Y., U. S. A., under charge of Mr. Peter McCartee, for urgent wants in that vicinity.

Double Tube Lightning Insect Exterminator and Sprayer

with Detachable Glass Reservoir.

A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy, and it does save time.

Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.

It is light, but well made; is cheap; and repairs, if needed, obtained in the smallest village.

Packed in cases of one dozen for foreign trade.

Circulars and prices free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

FLYKILLER OIL. 1 GALLON.
Fly=Killer Oil.

Protects Cows and Horses from torture by flies.

IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.

It is entirely harmless, and does not injure the coat of either cows or horses, and **it will keep flies from stock during the summer months.**

To be applied with a sprayer, but works best with our Double Tube Lightning Insect Exterminator and Sprayer.

Put up in one-gallon cans, one dozen cans to a box, for foreign trade. Circulars and prices free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

King of the Potato Field.

In Use in Potato Districts All Over the World.

A DIGGER THAT DIGS.

Most simple in construction, yet combining every essential principle to make a successful machine. Reasonable in price and within the reach of the smallest and poorer farmer. Full and complete description, with prices, will be sent free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

EXPORT IMPLEMENT AGE

NUR FÜR'S AUSLAND BESTIMMT.

Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

ABONNEMENTS-PREIS:

Für ein Jahr, portofrei, - - - - Mk. 4.25

Gelder können per Tratte auf New York oder durch internationale Postanweisung übersandt werden.

Es wird gebeten, Mitteilungen jeder Art zu richten an:

THE NOLAN PUBLISHING CO.,
DREXEL BUILDING,
Philadelphia, Pa., Vereinigte Staaten von Nord-Amerika.
W. P. NOLAN, Präsident und Director.

Von derselben Verlagsanstalt werden ferner herausgegeben: "The Implement Age" und "American Fertilizer."

Code für Telegramme: Lieber.

Adresse für Kabeldepeschen: "Nolanpub." Verlagsrecht der Nolan Publishing Co., 1899.

Band III. Philadelphia, Pa., Ver.St.v.N-Am., Okt., 1900. No.7

Das englische Pfund wiegt etwas weniger als ein halbes Kilo; es dient in Amerika allgemein als Gewichtseinheit.

Ein Selbst-Mäher (eine Mähmaschine die ohne Gespann arbeitet) ist nunmehr von amerikanischen Fabrikanten auf den Markt gebracht worden.

Der Gerätehändler, der den Landwirt dazu zu bewegen versteht, etwas Besseres zur Kultur seines Bodens zu verwenden, vergrössert die Ernte desselben, setzt mehr Geld in Umlauf und verkauft mehr Geräte und Maschinen.

Wenn in diesem Blatte kurtzweg von "Amerika" die Rede ist, so sind hierunter ausschliesslich die Vereinigten Staaten von Nord-Amerika zu verstehen. Diese Bezeichnung ist kürzer und wird allegemein verstanden.

In den Vereinigten Staaten von Nord-Amerika wird für aus anderen Ländern importirte Geräte und Maschinen kein Einfuhrzoll enthoben. Jedem ausländischen Fabrikanten steht es offen, seine Geräte hier feilzubieten: unsere Fabrikanten fürchten keine Konkurrenz.

Die besten Landwirte sind Diejenigen, die arbeitersparende Geräte benutzen. Der Landwirt, der angemessene Maschinen und Geräte besitzt, erzielt seine Ernten mit geringerer Mühe und billiger als Derjenige, der ohne die Beihilfe arbeitersparender Geräte und Maschinen seine ganze Familie zur Arbeit heranziehen muss.

Man unterlasse nie, eventuelle Bestellungen bei amerikanischen Fabrikanten unter genauer Angabe dessen machen, was gewünscht wird, und alle Einzelheiten bis ins Kleinste anzuführen. Unseren Fabrikanten ist es ebenso stark darum zu thun, den Wünschen ihrer Kunden nachzukommen, als es Letzteren darauf ankommt, die bestellten Artikel auch geliefert zu bekommen.

Seit Beginn dieses Jahres hat die Ausfuhr von Schaufeln, Spaten, Handschaufeln, Heugabeln, Hauen, Rechen, Feld- und Gartenwerkzeugen derartige Dimensionen angenommen, dass es nicht mehr als billig erscheint, anzunehmen, dass diese amerikanischen Produkte ihre wenigen Konkurrenten anderer Länder rasch hinter sich zurücklassen. Der zu ihrer Erzeugung verwendete Stahl ist vorzüglich, wie es ja der amerikanische Stahl stets ist, und die Art des Stampfens und Zusammenfügens dieser Werkzeuge verleiht denselben einen Gebrauchswert, der ihnen überall im Auslande, wo sie bekannt werden, rasch zu grosser Beliebtheit verhelfen muss.

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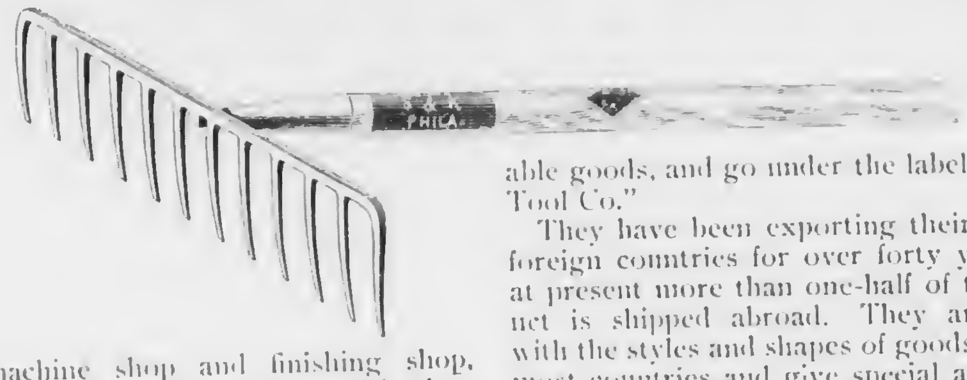
HAND, FARM AND GARDEN TOOLS.

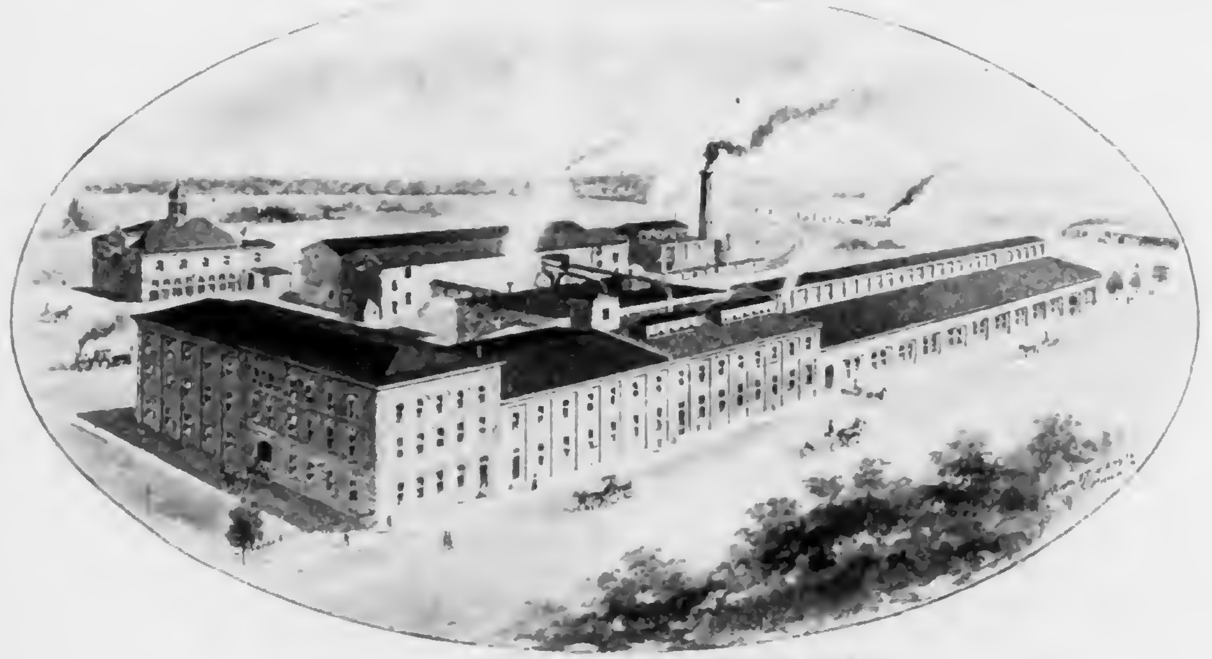
Messrs. Sheble & Klemm, Philadelphia, Pa., U. S. A., began the manufacturing of hand, farm and garden tools in the year 1850, in what was then known as the Fairmount district of Philadelphia, from which their works took the name "Fairmount Fork Works." Their business having outgrown this location, in 1856 they moved their works to Frankford, a suburb of Philadelphia, locating the same upon Frankford creek, making additions thereto as business required.

On the night of September 27th, 1899, they had the misfortune to have their entire works totally destroyed by fire. They immediately set about rebuilding upon the same site, and completed their new works, as shown in the illustration, and had the same in full operation April 23d, 1900.

In designing their new works, which occupies about three acres, they brought into good use their fifty years' experience in the manufacturing of steel goods, and according to their ideas erected their buildings in such manner to give them the best results.

The buildings are constructed of brick and stone, with the exception of the handle storage building and blacksmith shop, which are of corrugated iron. All the buildings have been planned according to the slow burning construction ideas, and have every improvement known of by expert factory architects. The works are divided into nine buildings, consisting of forge shop, polishing and tumbler shop, ferrule and handle preparing shop, handle storage building, power house, machine shop and finishing shop, stock building and offices, blacksmith shop and stable, and several of these buildings are divided into different departments.





Factory of Sheble & Klemm, Philadelphia, Pa., U. S. A.

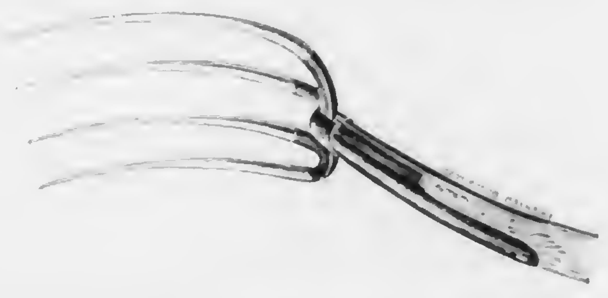
With their present facilities they are able to turn out 300 to 350 dozens forks, hooks, rakes, etc., daily, of different styles and shapes, the principal being hay, manure, spading, street, barley, straw, sluice, oyster, coke, coal, stone or ballast, tanners', cotton-seed, turnip or beet forks, potato and manure hooks, garden, ballast and asphalt rakes, and many other styles for special work.

The goods are divided into three grades. The best grades have labels bearing the name of "Sheble & Klemm" with trade-mark. The second grade is made to supply a demand at less price than the best grade, and are designated by label "Pennsylvania Fork Co." The third quality is low-price serviceable goods, and go under the label of "Eagle Tool Co."

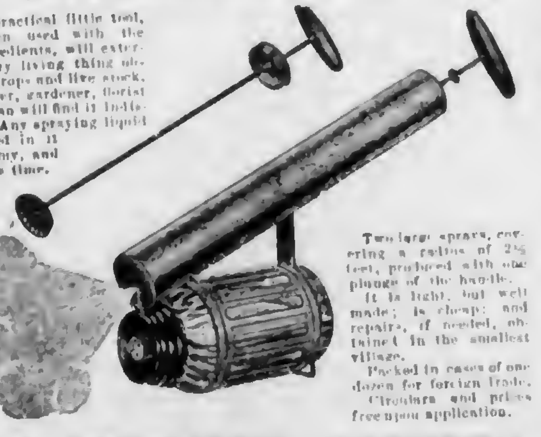
They have been exporting their goods to foreign countries for over forty years, until at present more than one-half of their product is shipped abroad. They are familiar with the styles and shapes of goods wanted in most countries and give special attention to packing and shipping to the best advantage of their customers.

They originated, and are the sole makers of, "Locked Forks and Hooks," as illustrated by accompanying cut of fork. These goods have a cap fitted over the head of the prongs and a rivet passing through the cap, ferrule, handle and head of the prongs, making it impossible for the fork or hook to work loose in the handle. These goods have a well-established reputation and are sold largely.

The illustration of steel garden rakes given is of particular merit by reason of it being made of one solid piece of steel, with no welded parts, and having the teeth straight and a back especially adapted for smoothing the surface. Asphalt rakes of this style are very desirable.



The main offices and warehouses are with the works at Frankford, Philadelphia, Pennsylvania, U. S. A., where a large stock of regular goods is kept on hand ready for prompt shipments. A stock of goods is kept also at No. 79 Chambers street, New York City, N. Y., U. S. A., under charge of Mr. Peter McCartee, for urgent wants in that vicinity.



Double Tube Lightning Insect Exterminator and Sprayer

with Detachable Glass Reservoir.

A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy, and it does save time.

Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.

It is light, but well made; is cheap; and repairs, if needed, obtained in the smallest village.

Packed in cases of one dozen for foreign trade.

Circulars and prices free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

Fly=Killer Oil.

Protects Cows and Horses from torture by flies.

IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.

It is entirely harmless, and does not injure the coat of either cows or horses, and **it will keep flies from stock during the summer months.**

To be applied with a sprayer, but works best with our Double Tube Lightning Insect Exterminator and Sprayer.

Put up in one-gallon cans, one dozen cans to a box, for foreign trade. Circulars and prices free upon application.

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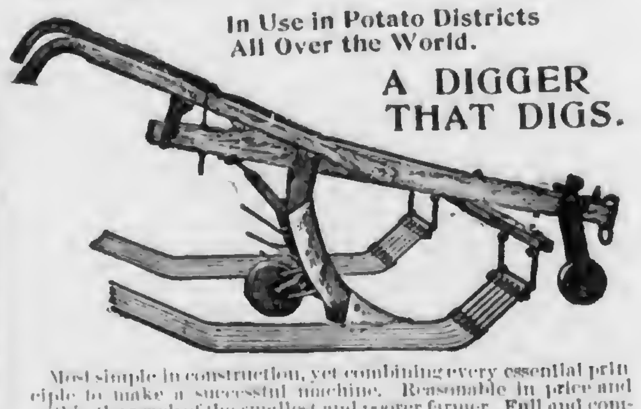

King OF THE Potato Field.

In Use in Potato Districts All Over the World.

A DIGGER THAT DIGS.

Most simple in construction, yet combining every essential principle to make a successful machine. Reasonable in price and within the reach of the smallest and poorer farmer. **Full and complete description, with prices, will be sent free upon application.**

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

EXPORT IMPLEMENT AGE

NUR FÜR'S AUSLAND BESTIMMT.

Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

ABONNEMENTS-PREIS:

Für ein Jahr, portofrei, - - - - Mk. 4.25

Gelder können per Tratte auf New York oder durch internationale Postanweisung übersandt werden.

Es wird gebeten, Mitteilungen jeder Art zu richten an:

THE NOLAN PUBLISHING CO.,
DREXEL BUILDING,
Philadelphia, Pa., Vereinigte Staaten von Nord-Amerika.
W. P. NOLAN, Präsident und Director.

Von derselben Verlagsanstalt werden ferner herausgegeben: "The Implement Age" und "American Fertilizer."

Code für Telegramme: Lieber.

Adresse für Kabeldepeschen: "Nolanpub." Verlagsrecht der Nolan Publishing Co., 1899.

Band III. Philadelphia, Pa., Ver.St.v.N-Am., Okt., 1900. No. 7

Das englische Pfund wiegt etwas weniger als ein halbes Kilo; es dient in Amerika allgemein als Gewichtseinheit.

Ein Selbst-Mäher (eine Mähmaschine die ohne Gespann arbeitet) ist nunmehr von amerikanischen Fabrikanten auf den Markt gebracht worden.

Der Gerätehändler, der den Landwirt dazu zu bewegen versteht, etwas Besseres zur Kultur seines Bodens zu verwenden, vergrössert die Ernte desselben, setzt mehr Geld in Umlauf und verkauft mehr Geräte und Maschinen.

Wenn in diesem Blatte kurtzweg von "Amerika" die Rede ist, so sind hierunter ausschliesslich die Vereinigten Staaten von Nord-Amerika zu verstehen. Diese Bezeichnung ist kürzer und wird allegemein verstanden.

In den Vereinigten Staaten von Nord-Amerika wird für aus anderen Ländern importirte Geräte und Maschinen kein Einfuhrzoll enthoben. Jedem ausländischen Fabrikanten steht es offen, seine Geräte hier feilzubieten: unsere Fabrikanten fürchten keine Konkurrenz.

Die besten Landwirte sind Diejenigen, die arbeitersparende Geräte benutzen. Der Landwirt, der angemessene Maschinen und Geräte besitzt, erzielt seine Ernten mit geringerer Mühe und billiger als Derjenige, der ohne die Beihilfe arbeitersparender Geräte und Maschinen seine ganze Familie zur Arbeit heranziehen muss.

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INTENTIONAL SECOND EXPOSURE

ARBAHMER.

Grosse Fortschritte im Abrahmen und im Molkereibetriebe im Allgemeinen.

Könnte man die ganze innerhalb eines Jahres in den Vereinigten Staaten von Nord-Amerika verbrauchte Milch in einen Strom verwandeln, so würde derselbe mächtig genug sein, um einen See zu bilden, dessen Breite und Tiefe einer ganzen Flotte von Linienschiffen genügenden Spielraum gewähren könnten. Von der enormen Entwickelung der Molkerei und ihrer Nebenindustrien in den Vereinigten Staaten von Nord-Amerika kann der in dieser Richtung Uneingeweihte sich auch nicht annähernd eine Vorstellung machen, da dieselben Milch, Käse, Butter und Abfallstoffe, wie auch Buttermilch und Molken umfassen, die zur Viehzucht verwandt werden: letztere bilden gleichfalls eine grosse Einnahmsquelle der Landgüter.

Die an allen Molkereigeräten fortwährend angebrachten Verbesserungen haben in der Art der Butter- und Käsefabrikation eine vollständige Umwälzung geschaffen. Während der Landwirt ehedem eine Kuh mit der anderen verglich und ihren Gebrauchswert nach dem täglichen oder wöchentlichen Ertrage an Butter beurteilte, findet er es heutzutage ganz einfach, den Gehalt an "Butterfett" in der Milch mittelst eines Laktometers zu bestimmen.

Jeder Landwirt ist mit der harten Arbeit des Butterns und den Schwierigkeiten wohlvertraut, die das Sinken der Milch und das Aufsteigen des Rahms ihm in seiner häuslichen Oekonomie bereiten. Rückenschmerzen und müde Arme, die schier endlose Zeit bis zur Erscheinung der Butter, sowie das fortwährende Reinigen, Ausbrühen und Handhaben der Geräte, wozu noch das Kneten der Butter kömmt—und zwar Alles Handarbeit—prägen sich seinem Gedächtnisse unauslöschlich ein. Das Buttern im altmodischen Butterfass soll mehr dazu beigetragen haben, den Bauernjungen das Landleben unerträglich zu machen und sie vom Landgut nach der Stadt zu treiben, als irgend ein anderer Umstand.

In früheren Zeiten wurde die Milch gemolken, abgekühlt, in Pfannen oder ähnliche Geschirre gegossen, abgerahmt, und der Rahm nach gehöriger Reife gebuttert. Alle diese Verfahren erheischten Zeit, und sowohl die Milch, als der Rahm waren mittlerweile dem Witterungswechsel und Temperatureinflüssen unterworfen, wobei auch noch die Tiefe der Geschirre eine Rolle spielte. Die während des Butterns erreichte Temperatur der Milch oder des Rahms war oft entweder zu niedrig oder zu hoch, da kein Thermometer benutzt wurde, und so kam denn die Butter zuweilen sehr rasch, und manchmal nicht vor einer Stunde; mit Hilfe der heutigen, verbesserten Vorrichtungen hingegen kann die Arbeit besser verrichtet werden und ist mit weniger Schwierigkeiten verknüpft.

Seit der Einführung des ersten Rahm-Separators haben viele Aenderungen und Verbesserungen stattgefunden. Jede Molkerei oder Butterfabrik, die einen Separator benützt, erhält denselben buchstäblich kostenfrei, da er seinen Preis durch das Wegfallen von Abrahmen, Buttern und Eiskühlen, wie auch durch Zeitersparniss wieder einbringt. Die Milch wird ventilirt, der Buttergewinn erhöht, das Produkt ist reiner und gleichförmiger, und die schwerwiegenden Auslagen für Lagerhäuser, Handhabung, Aufstellen, Abrahmen und andere nötige Vorkehrungen werden vermieden. Die so abgerahmte Milch ist weit frischer und süsser als die der alten Methode entstammende: auch bildet sie ein vorzügliches Futter fur Kälber, Schweine und Geflügel. Das ekelhafte Spühlicht für die Schweine (Sautrank) ist auch ein überwundener Standpunkt und dafür eine gesunde Nahrung da, die immer mit grossem Appetit aufgenommen wird.

Die Butterfabrikation im Grossen war vor dem Auftreten des Rahm-Separators einfach unmöglich. Nach der alten Methode benötigte das Rühren eines Kilos Butter gerade so viel Zeit, wie zwei oder drei Kilo, und da die Butter in kleinen Partien und von verschiedenen Familien geliefert wurde, waren fast so viele Personen nötig, als Kilo zu liefern waren; mit dem Separator ist es dagegen möglich, die Milch mehrerer hundert Kühe in kurzer Zeit vom Rahm zu trennen, wobei die Menschenarbeit auf ein Minimum reduzirt ist, und das ganze Verfahren grössere Reinlichkeit verbürgt und unter günstigeren Verhältnissen stattfindet.

Die aus Separator-Rahm erzeugte Butter ist ferner völlig gleichartig. Früher wurde die von verschiedenen Landgütern gelieferte Butter, die gewöhnlich Rahmstreifen zeigte, von Buttermilch triefte, entweder nicht gehörig gesalzen oder bitter war, wie es eben das Verständniss der betreffenden Butterer mit sich brachte, in ein Fass oder Schaff getan, und der Verkäufer war manchmal genötigt, die ganze Masse wieder durchzukneten, um eine etwas gleichartige Waare herzustellen; befanden sich nun einige Kilo untergeordneter Butter darunter, so wurde die Qualität der ganzen Buttermaasse dadurch beeinträchtigt.

Wenn wir sagen, dass der Separator die Herstellung besserer Butter erleichtert, so sollen dabei das Rührfass und der Kneter nicht vergessen sein. Alles hängt hauptsächlich von der Behandlung der Milch und des Rahms ab; es giebt aber auch vielfach verbesserte Butterfässer aller Grössen und Arten, wie auch Knetmaschinen, automatische Wagen zur Gewichtsbestimmung, Rahmkäse-Apparate, alle Arten von Pfannen, Kufen, Apparate zum Abbrühen und Reinigen der Geräte, verbesserte Wannen und noch viele andere Hilfsmittel der Butterfabrikation.

Die amerikanischen Fabrikanten glauben, ihre Separatoren derart vervollkommnet zu haben, dass ihre an die europäischen Händler und Milchwirtschaften gerichtete Aufforderung, mit ihren Apparaten einen Versuch zu machen, wohl gerechtfertigt ist. Mit erhöhter Leistungsfähigkeit und Vervollkommung der Apparate nehmen die Herstellungskosten in gleichem Verhältnisse ab, und lässt sich wohl mit Sicherheit behaupten, das kein anderes Land die Vereinigten Staaten von Nord-Amerika mit Bezug auf die Vorzüglichkeit ihrer Separatoren übertrefft.

Die amerikanischen Separatoren, Rührfässer u. s. f. besitzen einen Weltruf. Es giebt Hunderte von Butterfabiken in den Vereinigten Staaten von Nord-Amerika, and die hiesigen Landwirte wissen genau, welche Separatoren und Rührfässer ihnen passen, und welche nicht. Wenn der Gebrauch gewisser Separatoren in einer amerikanischen Fabrik angezeigt wird, so kann man sich darauf verlassen, dass es sicher die Besten sind, die zu haben sind, und dass sie genau das leisten, was ihnen nachgerühmt wird.

EIN AMERIKANISCHER "WOLKENKRATZER."

In den Vereinigten Staaten von Nord-Amerika giebt es Hunderte von ungemein hohen Gebäuden, die als "Wolkenkratzer" bekannt sind, und einige derselben ragen über 300 Fuss zum Himmel auf. Als ein Beispiel, wie ein solches Gebäude aus Eisen und Stahl in kürzester Zeit hier aufgeführt wird, bringen wir auf Seite 27 eine Abbildung des in Philadelphia im Bau begriffenen "North American" Gebäudes.

Das gegenwärtig sonderbare Aussehen des Gebäudes erregt allgemeine Neugierde, da es vom Himmel in die Erde zu wachsen scheint, anstatt von unten nach oben. Es wird zwanzig Stockwerke haben; vom zehnten bis zum achtzehnten Stock streckt sich eine solide Steinfaçade hin, und dem flüchtigen Beschauer kommt es vor, als ob das ganze, enorme Gewicht derselben auf keinen sichtbaren Stützen ruhte. Unterhalb befindet sich nur das leere, allseitig offene Gerüst. Thatsächlich kennzeichnet jedoch gerade dieser Umstand ein bemerkenswertes System in der Konstruction moderner "Wolkenkratzer." Dieselben unterscheiden sich nämlich von gewöhnlichen Bauten dadurch, dass ihr Gerüst oder Gerippe aus Stahl hergestellt ist. Bei kleineren Gebäuden ruht die gesammte Konstructian auf den Grundmauern, und jedes Stockwerk auf dem darunter befindlichen, während bei den "Wolkenkratzern" das Stahlgerüst die Last der einzelnen Stockwerke trägt und dieselben völlig unabhängig von einander sind; die Stahlsäulen sind in die Fussböden-Querbalken einigezapft und tragen alsdann die Steinmauer des betreffenden Stockwerkes. Die Vorteile dieses Systems springen in die Augen. Anstatt gezwungen zu sein, sich dem langsamen Fortschreiten des Gebäudes von unter nach oben anzubequemen, kann der Architekt seine Arbeit im dem Stockwerke beginnen, wo sich das Baumaterial am bequemsten handhaben lässt. Die Steinmauern des "North American" Gebäudes wurden in zwei Plätzen begonnen, nämlich zu ebener Erde und im zehnten Stock, und zwar nicht nur der Zeitersparniss halber, sondern auch in Anbetracht der geringen Strassenbreite, die der Ablieferung des Baumaterials hindernd im Wege stand. Sobald das Stahlgerüst aufgeführt ist, werden die Konkret-Fussböden gelegt, und das eintreffende Material wird durch Dampfaufzüge zu dem Stockwerke hinaufgezogen, das vollendet werden soll.

Eine andere überraschende Eigentümlichkeit des neuen Gebäudes ist die Schnelligkeit seines Aufbaues. Die schwierigste Aufgabe bot das Ausgraben der Grundfesten, die sich fünfunddreissig Fuss unterhalb des Strassenniveaus auf einer Schotterschichte befinden, da die eigentlichen Stützen des Gebäudes von denen der im Keller befindlichen Maschinenanlage isolirt werden mussten, um das Gebäude vor dem Vibriren der Maschinen zu bewahren.

Trotz dieser techinschen Schwierigkeiten soll das Gebäude am ersten November dieses Jahres, also weniger als ein Jahr nach dem ersten Spatenstich, vollendet sein und werden die 250 Quartiere desselben im Februar dem Gebrauche übergeben werden. Das Gebäude wird vielleicht das höchste der Stadt Philadelphia sein.

EIN GLÄNZENDES ZEUGNIS FÜR AMERIKANISCHE GERÄTE.

Ein der Gerätekunde gewidmetes, kanadisches Blatt, das unter dem Namen "Farm Machinery" in Sarnia, Kanada, erscheint, bespricht den Umstand, dass die kanadischen Landwirte trotz eines Einfuhrzolls von 20 Prozent für aus den Vereinigten Staaten kommende landwirtschaftliche Geräte und Maschinen ihren Bedarf in grossem Masstab aus amerikanischen Fabriken beziehen. Es citirt folgende Daten:

"Im Jahre 1899 importirte Kanada landwirtschaftliche Geräte und Maschinen zum Gesammtwerte von 1,095,000 Dollar. Von dieser Summe entfallen 347,133 Dollar auf die Landwirte von Ontario, die Erntemaschinen anschafften; 252,980 Dollar auf Manitoba, und 49,671 Dollar auf die nordwestlichen Gebiete. Unter dem alten Zolltarife von 35 Prozent im Jahre 1894 belief sich der Wert der importirten Ernte- und Getreidemähmaschinen, Grasmäher, Pflüge und Anbaumaschinen auf 128,593 Dollar, woraus ersichtlich ist, dass seit der Herabsetzung des Einfuhrzolls auf 20 Prozent des Wertes die Einfuhr dieser Waarenklasse gegen 1894 um mehr als das achtfache zugenommen hat. Diese Zunahme in der Einfuhr ist weit grösser als die der Nachfrage, was auf Abnutzung alter Maschinen und der Eröffnung neuer Landwirtschaftsgebiete zurückzuführen ist und, wie es scheint, auf eine Abnahme der heimischen landwirtschaftlichen Geräte- und Maschinenindustrie hinweist.

"Welchen Ursachen ist diese ganz unverhältnissmässige Zunahme der Einfuhr zuzuschreiben? Werden die amerikanischen Maschinen für besser gehalten? Dies scheint nicht wahrscheinlich. Sind importirte amerikanische Maschinen billiger als kanadische? Und sollte dies der Fall sein, auf welch' andere Ursachen wäre dies wohl zurückzuführen als auf billigeres Material und bessere Fabriksmethoden? Oder kümmern sich etwa die Fabrikanten der Vereinigten Staaten mehr um ihre Geschäftsinteressen und besitzen besser organisirte Verkaufsagenturen? Unter allen diesen Fragen ist eine, die sofort mit Bestimmtheit beantwortet werden kann: dass nämlich die amerikanischen Industriellen im Stande sind billigere Maschinen zu liefern, und dass der 20prozentige Zolltarif nicht hinreicht, um sie daran zu hindern, ihren kanadischen Mitbewerbern selbst auf deren eigenem Grund und Boden eine mehr als erfolgreiche Konkurrenz zu machen."

Dem auf amerikanische Geräte und Maschinen gelegten Zoll zum Trotze nimmt die Einfuhr derselben von Jahr zu Jahr stetig zu. Obgleich wir uns nicht mit allen oben angeführten Anschauungen einverstanden erklären können, erkennen wir das Zugeständnis an, dass die kanadischen Landwirte ihre Geräte von den Vereinigten Staaten von Nord-Amerika wohlfeiler beziehen können als im eigenen Lande, obschon Kanada viele bedeutende Fabriksanlagen besitzt und der Zoll hoch genug zu sein scheint, um allen Mitbewerb des Auslandes auszuschliessen. Thatsächlich weiss der kanadische Landwirt sehr gut, was er will, und wie er seinen Vorteil am besten wahren kann, und gerade deshalb kauft er von den Fabriken in den Vereinigten Staaten, obschon er von einheimischen Fabriken geradezu umgeben ist, und wozu auch noch ein zu Gunsten der kanadischen Industrie eingeführter Schutzzoll kommt.

DER "DANDY" WINDMOTOR BÜRGERT SICH IN ALLEN LÄNDERN DER WELT RASCH EIN.

Dieser automatisch regulirte Windmotor stammt aus den Vereinigten Staaten von Nord-Amerika, und ist in diesem Lande schon seit langen Jahren im Gebrauche, wie er auch nach und nach seinen Weg ins Ausland gefunden und gegenwärtig bereits in vielen fremden Ländern verbreitet und beliebt ist und sich überall rasch Anerkennung erworben hat. Sein geringer Preis und seine Dauerhaftigkeit erregen allseitige Bewunderung.

Der stählerne, galvanisirte "Dandy" Windmotor wird von der "Challenge Windmill and Feed Mill Co.," Batavia, Illinois, Vereinigte Staaten von Nord-Amerika, angefertigt und nach fast allen Teilen der Erde verschifft; und überall, wo er und seine Vorzüge schon lange genug bekannt sind, nimmt seine Ausfuhr grosse Dimensionen an.

Die auf Seite 44 befindliche Abbildung stellt einen in der argentinischen Republik in Süd-Amerika aufgestellten "Dandy" Windmotor mit Stahlturm dar, wie er aus einen tiefen Brunnen Wasser in einen fünfzig Fuss über der Erde befindlichen Behälter pumpt.

Ein anderer "Dandy" Windmotor mit Stahlturm befindet sich nahe bei Birmingham, England, und versieht einen Wein- und Gemüsegarten mit Wasser. In verschiedenen Teilen Grossbritanniens befinden sich mehrere hundert "Dandy" Windmotoren in erfolgreichem Betriebe.

Wir führen hier einen auf einem Stahlturm montirten "Dandy" Windmotor vor, der auf einer der vielen Strausszüchtereien Süd-Afrikas arbeitet und zur Zeit der Aufnahme des Bildes eben vollendt war. Auf den Landgütern und Pflanzungen von Süd-Afrika befinden sich Hunderte von "Dandy" Windmotoren in unausgesetztem und höchste Befriedigung gebendem Betriebe, und ein Gleiches ist in nahezu allen civilisirten Ländern der Welt der Fall.

Der "Dandy" Motor wird aus hochfeinem, kaltgewalzten Stahl in Verbindung mit bestem Fuss- und Schmiedeeisen hergestellt, und werden die Fächer und Windflugel nach ihrer Vollendung galvanisirt. Er ist nach wissenschaftlichen Grundsätzen gebaut, und dennoch einfach und leicht aufzustellen. Betriebsstörungen kommen bei ihm nicht vor; er arbeitet in dem leisesten Lüftchen und regulirt ihren Gang automatisch in stürmischem Wetter, so das er thatsächlich weit mehr sturmsicher ist als alle anderen bisher fabrizirten stählernen Windmotoren. Das gesammte Gewicht des Motors ruht auf einer 3½ Fuss unterhalb der Turmspitze befestigten Stahlplatte und kann daher von keinem Sturm weggeblasen werden. Motor und Turm sind unzertrennlich an einander befestigt.

Der "Dandy" Windmotor ist die Freude und Hoffnung des Landwirts, und liefert Wasser für alle Zwecke im Ueberfluss.

Der illustrirte Katalog der Firma giebt eine vollständige Beschreibung aller verschiedenen Arten von hölzernen und stählernen Windmotoren, Futtermühlen, Maisentkörnern, Stängelhäckslern, Sägetischen, Gasolinmaschinen, galvanisirten Schaukeln, hölzernen und stählernen Behältern, Pumpen, Röhren, Bestandteilen etc.

Die Fabrik beansprucht, was Ausdehnung und Vollständigkeit ihrer Einrichtung anbelangt, den ersten Platz unter allen Fabriken der Welt, die diese Art landwirtschaftliche Maschinen liefern; sie versendet ihren Katalog mit Vergnügen, wie sie auch bereit ist, in allen bisher noch unvertretenen Gebieten Agenturen zu errichten. Korrespondenz in allen Sprachen.

DER "FARMERS' FAVORITE" GETREIDEDRILL.

Die Fabrikation der auf Seite 50 abgebildeten "Farmers' Favorite" (der Landwirte Liebling) Getreidedrillmaschine reicht auf mehr als ein halbes Jahrhundert zurück, und die moderne Maschine dieses Namens erscheint eine Verkörperung der Kenntnisse und Erfahrungen ihrer Erfinder, die dieser Maschine seit 1842 ihre Kräfte ausschliesslich widmen. In den Vereinigten Staaten von Nord-Amerika ist ihre Vorzüglichkeit schon lange anerkannt, und wo sie während der letzten zehn Jahre eingeführt worden ist, nimmt sie eine hervorragende Stelle ein und steht heutzutage mit an der Spitze der amerikanischen Exportartilel. Zum Anbau von Getreide und Samen aller Art ist sie unübertrefflich. Ihre "Wizard" (Hexenmeister) Speisevorrichtung zur Verteilung von Kunstdünger ist von den Fabrikanten der Maschine, Bickford & Huffman Co., Macedon, New York, Vereinigte Staaten von Nord-Amerika, patentirt und hat nicht ihres Gleichen.

Im Folgenden führen wir einige der hervorhebenswertesten Punkte der "Farmers' Favorite" an. Es ist dies eine nicht nur im Gestell, sondern auch in allen einzelnen Teilen aus Stahl angefertigte Säemaschine, an der sogar die Saatröhren aus Stahl sind. Das solide Stahlgestell ist symmetrisch, von grosser Stärke und so gebaut, das jeder einzelne Bestandteil rasch ersetzt werden kann. Die Räder besitzen Walzenlager; der Zug ist leichter als bei allen anderen derartigen Maschinen; Achsen und Achsenstöcke sind aus feinem Hartstahl: der in der Mitte der Achse angebrachte Hebel ist zusammenlegbar und besitzt vorzügliche Druckkraft; die Zugbalken sind kurz und biegen sich absolut nicht, können leicht angelegt und abgenommen werden, und haben Beschläge zur Verhütung jeder Streckung; die Vorrichtung zur Regulirung des Ganges der Maschine ist präcise, einfach und stark, wodurch der Anbau sehr verschiedener Samenmengen ermöglicht wird; die Samenröhren sind ganz aus Stahl und daher unverwüstlich; die teleskopischen Auslaufschuhe sind einfach, funktioniren gut und sind dauerhaft.

Die Fabrikanten widmen den Walzenlagern der Räder, die die Reibung auf ein Minimum herabsetzen, ganz besondere Aufmerksamkeit. Zu erwähnen sind auch die aus Bandstahl hergestellen Fallröhren, die die fortwährende Erneuerung der Kautschukröhren, was eine bedeutende Geldauslage erheischt, überflüssig machen. Beide, sowie die Drillmaschine selbst, sind hier abgebildet.

Ausser dem gewöhnlichen Hauendrill liefert die Firma Bickford & Huffman Co. auch einen Scheibendrill. Die Scheiben und Hauen können nämlich an derselben Maschine ausgewechselt werden, so dass der Landwirt für eine mässige Mehrauslage thatsächlich zwei Anbaumaschinen besitzt: eine mit Hauen und eine andere mit Scheiben.

Illustrirte Kataloge and Preislisten werden auf Verlangen franco versandt.

WERKZEUGE, FELD- UND GARTEN-GERÄTE.

Die Firma Sheble & Klemm, Philadelphia, Pennsylvania, Vereinigte Staaten von Nord-Amerika, begann die Fabrikation von Werkzeugen, Feld- und Gartengeräten im Jahre 1850. Ihre neue Fabrik nimmt etwa drei Acker Landes ein, und mit einer fünfzigjährigen Erfahrung in der Fabrikation von Stahlwaaren errichtete die Firma ihre Gebäude in einer Weise, die die besten Resultate verbürgt.

Die Fabriksanlage zerfällt in neun abgesonderte Gebäude, welche die Giesserei, Polir- und Dreh-Werkstätten, die Räume für Herrichtung von Handhaben und Beschlägen, ein Lagerhaus für diese, ein Maschinhaus, Maschinen- und Montirwerkstatt, Gerätelagerhaus und Bureaux, Schmiede und Stallungen umfasst. Einige dieser Gebäude enthalten verschiedene Abteilungen.

Zur Ausrüstung der Fabrik mit den zum Betrieb nötigen Maschinen wurden nur solche ausgewählt, die sich nach der Ansicht und Erfahrung der Besitzer am besten für ihren Industriezweig eigneten. Dieselben sind mit Recht stolz darauf, die modernste und bestbetriebene Fabrik von Werkzeug, Feld- und Gartengeräten in den Vereinigten Staaten von Nord-Amerika zu besitzen, und glauben kaum, dass Europa Aehnliches aufzuweisen habe, da sie im Stande sind, den Weltmarkt mit Waaren unübertroffener Qualität und sorgfältigster Arbeit zu beschicken.

Man fertigt hier Alles aus dem besten Material an, das überhaupt erhältlich ist, und alle Geräte werden mit soliden Stielen versehen und die Zacken mittelst Dampfhammer aus einem soliden Stück Stahl geschmidet, nicht ausgewalzt, wie in der Regel geschieht.

Die Fabrikanten von Stahlwaaren walzen die Zacken, anstatt sie unter dem Dampfhammer zu schmieden, da ersteres Verfahren billiger ist. Die Firma Sheble & Klemm ist jedoch der Ansicht, dass das System der in ihrer Fabrik verwendeten Dampfhämmer die Lieferung einer weit besseren Waare ermöglicht. In der That is Jeder, der mit der Verarbeitung von Stahl vertraut ist, davon überzeugt, dass das Schmieden die Quälität des Stahles verbessert, während das Walzen dieselbe im Gegenteil herabsezt.

Die neuen Einrichtungen der Fabrik ermöglichen die tägliche Lieferung von 300 bis 350 Dutzend Gabeln, Hacken, Rechen u. s. w. verschiedener Systeme und Formen, hauptsächlich Heu-, Mist-, Spaten-, Schotter-, Gersten-, Stroh-, Schleusen-, Auster-, Coke-, Kohlen-, Stein- or Ballast-, Gerber-, Baumwollsamen-, Burgunder- und Zuckerrüben-Gabeln; Kartoffel- und Düngerhacken; Garten-, Schotter- und Asphaltrechen, und viele andere Arten zu besondere Spezialzwecke.

Die Fabrikate dieser Firma sind in drei Klassen gesondert. Die der ersten Klasse sind mit dem Namen "Sheble & Klemm" und der Handelsmarke gestempelt; die der zweiten Klasse befriedigen die Nachfrage nach billigeren Geräten guter Qualität und zeigen den Fabrikstempel "Pennylvania Fork Co.;" die der dritten Klasse umfassen brauchbare Geräte zu niedrigen Preisen und tragen die Marke "Eagle Tool Co." Sämmtliche Fabrikate werden seit mehr als vierzig Jahren nach dem Auslande exportirt, und beträgt die Ausfuhr der Firma gegenwärtig mehr als die Hälfte des ihrer Gesammtproduktion. Die Fabrikanten sind mit Art und Form der in den meisten Ländern benötigten Geräte völlig vertraut und trachten darnach, ihre Kunden durch sorgfältige Verpackung und pünktliche Erledigung zufriedenzustellen.

Sie sind die Erfinder und alleinigen Fabrikanten der "Locked Forks and Hooks" (unauflöslich befestigte Gabeln und Hacken), die auf Seite 38 abgebildet sind. Bei denselben ist eine Schale über die Zacken gelegt, und eine Niete durch Schale, Beschlag, Stiel und das untere Ende der Zacken gezogen, so dass die Gabel oder der Hacken niemals locker werden kann. Diese Geräte besitzen einen wohlverdienten Ruf und weitverbreitete Anwendung.

Die auf Seite 22 befindliche Abbildung stellt stählerne Gartenrechen dar und zeigt, dass dieselben aus einem einzigen Stück soliden Stahls ohne jegliche Schweissung geschmiedet und die Zähne gerade sind, während sich deren abgeflachte Rückseite zum Glätten der gefurchten Erdoberfläche vorzüglich eignet. Asphaltrechen dieser Art sind ganz besonders beliebt.

AMERIKANISCHE KRAFTMÜHLEN IM AUSLANDE.

Die Firma The Perkins Windmill Co. in Mishawaka, Indiana, Vereinigte Staaten von Nord-Amerika, ist eine der bedeutendsten Fabriks-Gesellschaften in den Vereinigten Staaten von Nord-Amerika. Sie liefert Windmotoren, Behälter, Türme u. s. w. In den Vereinigten Staaten werden ihre Fabrikate allenthalben verwendet, und ist daher die Fabrik zu allen Zeiten vollauf beschäftigt.

Während der Perkins'sche Export von Pumpen sich während der letzten zwanzig Jahre ganz enorm vergrössert hat und einen wichtigen Industriezweig der Firma bildet, erregte ihre Kraftwindmühle verhältnissmässig nur geringes Interesse. Doch jede während der letzten fünf Jahre gemachte Bestellung auf eine solche Windemühle hat stets weitere Bestellung nach sich gebracht, sobald nur die betreffenden Mühlen aufgestellt waren. Während der letzten Kampagne waren die Fabrikanten genötigt, diesem Industriezweige ganz besondere Aufmerksamkeit zu widmen; heute ist sie in Amerika wohlgekannt und geschätzt, und durch ihre Konstruktion und Dauerhaftigkeit eignet sie sich vorzüglich für alle klimatischen Verhältnisse, so dass die gesteigerte Fabrikation der Nachfrage gegenwärtig kaum gerecht zu werden vermag.

Die Abbildung auf Seite 48 stellt eine Kraftwindühle mit einem Cylinder von 14 Fuss zum Pumpen, Schroten und Futterschneiden, sowie einen Wetzstein zum Schärfen von Werkzeugen und eine Holzsäge dar. Tausende von Landwirten verwenden jetzt diese Kraftmühlen mit gutem Erfolge und bezeugen, dass dieselben ihre Arbeit in zufriedenstellender Weise und billiger leisten als es selbst die allerbilligste Handarbeit thun könnte. Alles was nötig ist, ist den Speisetrichter mit Getreide gefüllt zu halten, und die Mühle shrotet jedwede Art von Getreide oder Futter Tag und Nacht.

Die Firma Perkins Windmill Company fabrizirt ausserdem in ihren Gewerken in Mishawaka, Indiana, Vereinigte Staaten von Nord-Amerika, eine reichhaltige Auswahl ihrer wohlbekannten stählernen und hölzernen Windmühlen zum Wasserpumpen. Anfragen von Interessenten aller Länder sind der Firma stets erwünscht. Sie ist auf gute Verpackung und prompte Verladung aufs Beste vorbereitet.

DER KONIG DES KARTOFFELFELDES.

Die mühevolle Arbeit des Ausgrabens der Kartoffeln mit der sie begleitenden Kraft und Knollenverschwendung wird durch die Anwendung eines diese Arbeit vollständig verrichtenden Gerätes, das zu einem für jeden Kleinbauer erschwinglichen Preis erworben werden kann, leicht gemacht. Diese Maschine arbeitet in nahezu allen Boderverhältnissen; sie besitzt vibrirende Stahlfinger, die die Kartoffeln vom Schmutz befreien und auf beiden Seiten der Furche ablegen, wo sie völlig sichtbar sind, während die zwei vorn und hinten befindlichen Fahrräder einen gleichförmingen Tiefgang zusichern. Die Maschine ist von leichtem Zuge und sicherem Gange. Sie ist auf Seite 38 abgebildet.

Sie ist nach streng wissenschaftlichen Grundsätzen gebaut, um diese Spezialarbeit zu verrichten, und löst die ihr gestellte Aufgabe, die Kartoffeln frei von anhaftender Erde so rasch und schnell aus dem Boden zu heben, wie ein Pferd im Schritt gehen kann, aufs Allerbeste. Eine Maschine, die dies thun und dabei lange halten kann, muss aus dem besten Material und sorgfältig konstruirt sein. Der dieser Maschine von ihrem Fabrikanten, dem Herrn H. W. Doughten, Moorestown, New Jersey, Vereinigte Staaten von Nord-Amerika, gegebene Name ist "König des Kartoffelfeldes" (King of the Potato Field).

Sie ist für den Landwirt eine Ersparniss an Geld und Arbeit, und befindet sich in nahezu jedem der Vereinigten Staaten von Nord-Amerika in erfolgreichhem Betriebe. Agenten finden es leicht, diese Maschine einzuführen, da sie beweisen können, dass sie alle gestellten Anforderungen erfüllt.

Herr Doughten fabrizirt auch den doppelröhrigen Insektenvertilger (Double Tube Lightning Insect Exterminator), der mit Blitzesschnelligkeit arbeitet und sich für Landwirte, Gemüsse- und Blumen-Gärtner, sowie für Viehzüchter gut eignet. (Siehe Abbildung Seite. 38) Es ist dies ein Zerstäuber, der sich von allen anderen derartizen Apparaten wesentlich unterscheidet.

Eine einziger Druck auf den Handgriff bringt zwei Strahlen hervor, die in einem Radius von je anderthalb Fuss sprengen. Der Behälter ist aus Glas, kann also nie von Rost zerfressen werden und setzt den Arbeiter in den Stand, jederzeit zu sehen, wie sich die verschiedenen Bestandteile inwendig vermengen, und wie sie ausströmen. Flüssigkeiten aller Art können zur Verwendung gelangen.

Herr Doughten liefert für diesen Zerstaüber eine Substanz, die wahrscheinlich zum Töten und Wegscheuchen von Fliegen und anderen Insekten unerreicht dasteht. Dieses "fliegentötende Oel" wird mit dem Zerstäuber ausgesprengt und hält die Fliegen während der Sommermonate vom Vieh ab. Praktische Versuche haben ferner ergeben, dass der Gebrauch dieses Oels den Milchertrag wesentlich, ja in einzelnen Fällen um volle zwanzig Prozent steigert.

Agenten, die sich für diesen Industriezweig interessiren, sollten nach näherer Auskunft schreiben, da der Fabrikant allen Händlern im Auslande äusserst günstige Bedingungen stellt. Man richte alle Aufragen an Herrn H. W. Doughten, Moorestown, New Jersey, Vereinigte Staaten von Nord-Amerika.

EXPORT IMPLEMENT AGE

POUR LA CIRCULATION À L'ÉTRANGER EXCLUSIVEMENT.

Journal indépendant, dévoué exclusivement au intérêts du commerce d'exportation de machines d'agriculture, pompes, moulins à vent, outils de fermes et de crémerie accessoires.

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La livre anglaise vaut un peu moins d'un demi-kilogramme. En Amérique les poids s'expriment en livres.

La faucheuse automobile (marchant sans chevaux) est déjà présentée au public par les constructeurs américains.

Quand nous parlons de "l'Amérique" dans ce journal, nous voulons dire toujours "les États-Unis d'Amérique:" c'est une abréviation que tout le monde comprend.

Il n'existe pas de tarif douanier aux États-Unis frappant de droits d'entrée les instruments aratoires provenant de l'étranger. Le monde entier est invité à venir nous vendre des instruments aratoires: nos constructeurs ne craignent pas la concurrence.

Le négociant qui, par son influence sur le cultivateur, réussit à lui faire employer de meilleurs instruments de culture, augmente le rendement de la ferme en récoltes, accroit le volume d'argent en circulation, et se prépare une vente plus importante en instruments aratoires et machines agricoles.

Ne manquez pas de vous adresser aux fabricants américains pour les machines dont vous avez besoin, et donnez des détails bien clairs et explicites: ils sont aussi anxieux, aussi désireux de vous vendre et de se conformer à vos demandes spéciales que vous pouvez l'être de recevoir les articles qui vous manquent.

Les appareils mécaniques pour le foncement des puits ont fini par devenir, à certaines périodes, un important chapitre d'exportation. Creuser un puits à peu de frais, avec la moindre dépense de force et l'outillage le moins encombrant possible, c'est là un problème auquel le puisatier de profession doit constamment s'attacher. Les pertes et retards inséparables des ruptures de pièces sont passablement fréquents lorsque l'acheteur ne prête pas une attention suffisante à la provenance de ses outils. Il existe en Amérique des constructeurs d'appareils mécaniques pour puisatiers dont la garantie est absolue et la réputation faite dans le monde entier pour la perfection de leur fabrication.

Le négociant étranger vend des instruments aratoires et des machines agricoles dans le but de réaliser un bénéfice. Il vend à quiconque veut lui acheter, et il fait bien d'acheter de quiconque a des instruments aratoires à lui vendre, pourvu, bien entendu, que ce vendeur tienne ce que convient à sa clientèle. Il doit se garder des fournisseurs favoris, des préjugés et des préventions, et se borner à chercher ce qu'on peut lui offrir de mieux.

Les meilleurs cultivateurs sont ceux qui savent faire usage des instruments aratoires réalisant une économie de main-d'œuvre. Le travail humain coûte cher, et le prix vient s'en ajouter au prix de revient. Un fermier sans enfants et qui possède un outillage convenable, obtiendra des récoltes lui revenant moins cher et au prix de moins de peine que tel autre fermier qui compte sur le travail de sa famille entière pour se passer d'instruments mécaniques qui supprimeraient en grande partie sa main-d'œuvre.

La maison Milwaukee Harvester Company, de Milwaukee, État de Wisconsin (États-Unis), a exposé, cette saison, ses machines dans plusieurs expositions agricoles des plus importantes en Europe, et y a remporté bon nombre de prix, entre autres la médaille d'or de l'Exposition de Paris, la médaille d'argent de la Société Agricole de Peterborough (à son Exposition à Peterborough, Angleterre), et une médaille d'importance toute spéciale: la médaille d'argent de la Société Agricole Royale d'Angleterre lors de son exposition de cette année à York. La dernière de ces médailles ne fût allouée qu'après de sévères essais avec du seigle long et vert, et c'était le seul prix accordé par la Société aux instruments de moisson.

Dans la correspondance européenne on indique, dans l'adresse, la rue et le numéro après le nom du fabricant destinataire. Aux États-Unis il n'est pas toujours nécessaire d'écrire la rue et le numéro, mais il faut faire suivre le nom de la ville ou du village de celui de l'État, par exemple: "John Smith, Philadelphie, Pa. (l'abréviation "Pa." signifie l'État de Pennsylvanie), États-Unis d'Amérique." Cette nécessité tient à ce que les États-Unis comptent un grand nombre d'États, unis en une seule nation, mais ayant chacun leur gouvernement séparé et distinct. On trouve, par exemple, 23 bureaux de poste du nom de "Lafayette" aux États-Unis, mais jamais deux bureaux du même nom dans un même État.

La laiterie et la crèmerie sont d'une promptitude proverbiale lorsqu'il s'agit de noter l'apparition de séparateurs à bras perfectionnés et de les adopter. Certains modèles récemment construits méritent de fixer l'attention. Rien que le gain en beurre réalisé par les meilleurs modèles sur quelques-uns des moins bons suffirait à payer bientôt le prix d'achat de la marque supérieure. Le séparateur mécanique constitue l'un des derniers progrès venus à enrichir l'outillage de la laiterie moderne. Les perfectionnements se sont succédés jusqu'à ce jour, où il semble que la perfection même ait été atteinte. On rencontre à l'étranger, dans certains milieux, une sorte de prévention contre le séparateur, et les agents dont le champ d'action se compose de localités où les mérites de la nouvelle invention ne sont point encore établis par l'expérience, trouvent quelque difficulté à en introduire l'usage. Le séparateur américain, tel qu'il existe aujourd'hui, ne peut manquer d'obtenir qu'on lui rende justice partout où on lui donnera l'occasion de démontrer son excellence.

Les cultivateurs sont prévoyants et amis du progrès en bien des choses, mais l'oubli, la négligence d'un ou deux détails essentiels dans l'administration de leur culture leur fait perdre des économies pourtant nécessaires. Cette observation s'applique avec une force particulière à la mise en balles. Nombreux sont les fermiers, tant aux États-Unis qu'à l'étranger, qui trouvent l'achat d'une presse trop dispendieux, sous prétexte qu'il leur serait impossible de lui fournir assez de travail pour une longue marche. Mais entre les presses mécaniques s'actionnant à bras, par manège et par vapeur, il y a de quoi choisir. Une presse à balles est un objet de première nécessité. Et il en est dans le commerce des presses à balles qui méritent toute confiance. Elles sont bien construites et toujours prêtes à servir. Elles économisent du temps, de la place, du coulage, et s'imposent comme partie de l'outillage de tout cultivateur dont l'esprit est ouvert au progrès, tant aux États-Unis qu'à l'étranger.

Les dernières annees ont vu les cultivateurs reconnaître l'avantage des pompes pour leur alimentation d'eau: il en est résulté l'éclosion d'un grand choix de modèles et la nécessité d'une sélection intelligente de la part de l'acheteur, notamment lorsqu'on a un service spécial à demander à l'appareil. Les agents des maisons d'Europe, ainsi que les exportateurs américains, trouveront profit à consulter nos colonnes sur le sujet des pompes pour puits artésiens, pompes centrifuges, rotatoires ou d'arrosage, pompes mues à bras ou par moulin à vent. Certains modèles, qui se démontent et s'emballent sous un petit volume, conviennent bien aux puits soit de faible, soit de grande profondeur, et peuvent se monter en vue de la marche à bras ou de l'actionnement par moulin à vent; les soupapes et clapets peuvent en être réparés ou ajustés sans relever ni démonter la pompe, ni descendre dans le puits. Nos constructeurs américains savent se plier à toutes les circonstances possibles.

On trouvera pages 52 et 54 une liste de maisons industrielles, avec les articles de leur fabrication: cette liste est arrangée pour la commodité des acheteurs Les éstablissements mentionnés comptent au rang des plus importants des États-Unis; ils sont absolument sûrs et dignes de confiance, possèdent un outillage et des facilitiés de fabrication de premier ordre, et font preuve d'exactitude dans leurs transactions. Ils sont parfaitement au courant du commerce d'exportation et donnent une attention particulière aux ordres venant l'étranger. La collection de "l'Export Implement Age" se trouve dans leurs bureaux, et le nom de notre journal, mentionné par vous, les engagera à redoubler encore de zèle et d'exactitude pour vous obliger. Les clients étrangers qui leur adresseront des demandes de renseignements relatifs à quelque machine agricole ou instrument aratoire de fabrication américaine, verront leur lettre faire l'objet de soins attentifs, prompts et minutieux. Ecrivez dans n'importe quelle langue, à votre choix.

SÉPARATEURS DE CRÈME.

Les grands perfectionnements réalisés dans la séparation de la crème du lait et dans l'exploitation des laiteries.

Si tout le lait qui se consomme aux États-Unis dans le cours d'une année pouvait se dériver dans un lit de rivière, il formerait un lac de tour et de profondeur suffisants pour y mouiller toute une flotte de cuirassés. L'industrie de la laiterie aux États-Unis a pris des proportions colossales, dont il est impossible de se faire une idée sans renseignements précis: elle comprend le lait, les fromages, le beurre, et embrasse en outre les sous-produits tirés des déchets tels que le petit-lait, lequel sert à nourrir les porcs et par suite à produire le lard dont la culture tire de gros revenus.

Les perfectionnements apportés à l'outillage de la laiterie ont révolutionné les procédés de fabrication du beurre et du fromage. Autrefois le fermier comparait ses vaches entre elles et estimait la valeur et le rendement de chacune d'après la quantité de beurre qu'elle produisait par jour ou par semeine; aujourd'hui il ne trouve aucune difficulté à évaluer la proportion de matière grasse contenue dans le lait, et par suite la proportion de beurre à attendre, à l'aide d'une éprouvette à lait.

Il n'est pas de cultivateur qui ne connaisse la peine que donne la fabrication du beurre à la ferme même, les difficultés qu'on éprouve pour bien faire reposer le lait et monter la crème. Maux de reins, courbatures des bras, attente indéfinie avant que le beurre veuille bien prendre, sans compter l'échaudage et le nettoyage des ustensiles et la nécessité de travailler le beurre—tout cela à la main—ce sont là autant de souvenirs inoubliables. On a dit que la corvée de battre le beurre dans la baratte de jadis avait plus fait pour éloigner les jeunes gens des fermes et les faire émigrer dans les villes, que n'importe quel autre motif.

Autrefois le lait, sitôt trait, était mis à reposer et à refroidir dans des terrines ou autres vases convenables; on écrémait ensuite, et la crème, une fois "faite," était battue à la baratte. Toutes ces opérations prenaient du temps, pendant lequel lait et crème demeuraient soumis à l'influence des changements atmosphériques, à celle de la temperature et aussi de la profondeur des terrines. Parfois, lorsqu'on battait le beurre, le lait ou la crème se trouvait être à une température trop basse; d'autres fois trop haute; car on ne pensait guère à se servir du thermomètre; de la sorte il pouvait arriver que le beurre se prît tout de suite, mais aussi qu'il fût une heure sans prendre; grâce aux appareils perfectionnés d'aujourd'hui cependant, ce travail peut être exécuté avec plus de précision et moins de difficultés.

Depuis l'apparition des premiers séparateurs, bien des modifications et des perfectionnements y ont été apportés. Chaque laiterie, chaque crémerie où on se sert d'un séparateur peut se considérer comme l'ayant reçu gratis, tant elle a économisé par son emploi de travail d'écrémage et de battage, de glace et de temps. Le lait est bien aéré, la quantité de beurre produit augmentée; le beurre est plus pur et plus régulier de qualité, et l'on évite les gros frais de magasinage, de maniement, de décantage, d'écrémage et d'autres opérations accessoires; enfin le lait écrémé, étant plus frais et mieux exempt de fermentation que sous le régime de l'ancien procédé, constitue un aliment meilleur pour les veaux, les porcs et la volaille. Ce n'est pas un barbotage infect à peine propre à donner aux porcs, mais une nourriture saine que les animaux absorbent avec le plus grand plaisir.

Jusqu'à l'apparition du séparateur de crème il était impossible de fabriquer le beurre sur une grande échelle. Il fallait autant de travail pour battre un kilogramme ou une livre de beurre par le vieux procédé que pour battre deux ou trois kilogrammes; et comme le beurre était fait par des familles différentes en petits lots, cette fabrication demandait le concours de presque autant de personnes qu'il y avait de kilogrammes ou de livres de beurre à produire; au contraire, le séparateur de crème rend possible de séparer, en un temps très court, la crème contenue dans le lait de centaines de vaches; les frais de main-d'œuvre sont réduits au minimum, en même temps que l'opération s'accomplit dans des conditions beaucoup meilleures de propreté, etc.

L'introduction du séparateur n'a cependant pas eu comme résustat une baisse de prix. Autrefois il y avait tant de mauvais beurre sur le marché que les prix variaient, et le meilleur beurre, tout en se vendant cher, était rare, bien que le marché abondait de l'article de mauvaise qualité. Le séparateur permet au laitier de produire un beurre de qualité supérieur, parce que les odeurs, la saleté et les délais de la grange n'existent plus là où l'on se sert du séparateur; et la demande pour le bon beurre a augmenté parce que le consommateur qui ne voudrait se servir de mauvais beurre, est disposé à acheter ce qui est bon; de cette façon le séparateur n'a fait qu'augmenter la demande, et la conséquence en est que le beurre se vend plus cher aujourd'hui qu'autrefois.

En disant que le séparateur de crème aide à produire un beurre de qualité supérieure, nous n'oublions certes pas la baratte ni la travailleuse à beurre. C'est du traitement du lait et de la crème que tout le succès dépend, mais il existe également des barattes perfectionnées, de grande comme de petite taille, à dispositifs et fonctionnements variés; sans compter les travailleuses ou manieuses à beurre, les balances automatiques, les installations en menuiserie pour crémeries, les terrines et bassins de réception et jattes de toute espèce, les appareils et dispositifs pour l'échaudage et le nettoyage des ustensiles, les baquets d'expédition perfectionnés, enfin tous les autres accessoires de la fabrication du buerre.

Les fabricants américains croient avoir perfectionné les séparateurs de crème à tel point que la demande qu'ils adressent aux marchands et laitiers européens d'essayer leurs appareils est tout à fait légitime. À mesure qu'augmentent l'efficacité et la perfection des appareils, les frais de production diminuent: et l'on peut affirmé avec toute certitude que nul pays ne surpasse les États-Unis dans l'excellence de leurs séparateurs de crème.

Les séparateurs, barattes, etc., de fabrication américaine ont conquis une réputation universelle. Les États-Unis possèdent des centaines de fabriques de beurre, et les fermiers ont appris par expérience quels sont les séparateurs et barettes d'emploi avantageux, et quels sont les modèles à rejeter. Lorsque l'on sait que tel modèle de séparateur est en service dans les grandes fabriques d'Amérique, on peut être certain que c'est le meilleur modèle qu'on puisse se procurer, et qu'il rendra tous les services qu'on peut en attendre sur la foi des assertions du vendeur.

UN "GRATTE-CIEL" AMÉRICAIN.

Les États-Unis contiennent des centaines de bâtiments très élevés, qu'on désigne sous le nom de "gratte-ciels." Certains atteignent 300 pieds de hauteur. Comme exemple de construction d'un édifice en fer et en acier, et de la rapidité avec laquelle on peut le construire, nous donnons une vue de l'édifice dit "North American Building," actuellement en cours d'érection à Philadelphie. (Voir page 27.)

La curiosité publique a été éveillée par l'apparence étrange de la construction, qui semble descendre du ciel au lieu de monter du sol. Elle doit avoir vingt étages: du sixième au vingtième étage se développe présentement une façade ininterrompue de pierre, et il semble au premier coup d'œil que cette énorme masse se maintienne en place sans support apparent. On n'aperçoit en dessous que la carcasse du bâtiment avec ses cadres de plancher béants. En réalité, on touche là du doigt un élément caractéristique notable du mode de construction des "gratte-ciels" modernes. La différence des gratte-ciels avec les autres bâtiments consiste en ce que leur carcasse, leur ossature est toute en acier. Dans les constructions plus basses toute la structure repose sur les fondations, et chacun des étages sur l'étage immédiatement inférieur, tandis que dans le "gratte-ciel" tout est suspendu à l'armature d'acier, chaque étage étant par lui-même indépendant: en fait, l'ossature d'acier se prolonge horizontalement par un rebord accolé au poitrail de sablière de l'étage, lequel soutient la maçonnerie de cet étage. Les avantages de ce système sont évidents. Au lieu d'être confiné au procédé si lent qui consiste à bâtir de bas en haut en partant du pied du mur, le constructeur se trouve libre de commencer à tel étage qu'il lui plait, celui où la manœuvre des matériaux peut se faire à un moment donné avec le plus de facilité. La maçonnerie du "North American Building" a été entamée sur deux points à la fois—au ras du sol et au dixième étage—et cela non seulement pour gagner du temps, mais aussi à cause de l'espace très limité dont on disposait dans la rue pour le déchargement des matériaux. Sitôt l'ossature métallique en place, les planchers en béton furent établis, et les matériaux, au fur et à mesure de leur arrivée, sont immédiatement hissés jusqu'à l'étage où l'on travaille pour le moment.

Ce qui surprend également dans le nouveau mode de construction, c'est la rapidité d'érection du bâtiment. Le problème le plus sérieux s'est posé pour le creusement des fondations, lesquelles sont établies à trente-cinq pieds au dessous du niveau de la rue, sur une couche de gravier; il fallait que les fondations soutenant la bâtisse proprement dite fussent isolées de celles qui porteraient les machines motrices installées dans les caves, afin de supprimer la vibration.

En dépit de ces difficultés, l'édifice sera prêt à être occupé le 1er novembre prochain, c'est-à-dire moins d'un an après le premier coup de pioche; et les 250 bureaux qu'il doit abriter seront prêts à ouvrir en février. Le bâtiment complètement terminé sera sans doute, à ce moment, le plus élevé que contienne la ville de Philadelphie.

L'ARRACHEUSE DE POMMES DE TERRE DITE "LA REINE DES CHAMPS DE POMMES DE TERRE."

Le travail pénible de l'arrachage des pommes de terre, avec la peine et la perte qui en sont inséparables, est rendu aisé par l'emploi d'un outil qui s'acquitte de la besogne à la perfection et se vend à un prix à la portée de la bourse de tous les agriculteurs. Cette machine fait de bon travail dans tous les terrains, à de bien rares exceptions près. Elle a des doigts d'acier animés d'un mouvement de vibration, lesquels séparent les tubercules de la terre et les déposent en deux rangées, bien en vue, des deux côtés du sillon; pendant ce temps les deux roulettes (d'avant et d'arrière) assurent l'égalité de profondeur de la fouille, la légèreté du tirage et la marche uniforme et régulière des roues du train. On trouvera page 38 une vue de la machine.

Construite en accordance étroite avec des principes absolument scientifiques et en vue de la besogne spéciale dont nous traitons, cette machine résout le problème qui consiste à arracher du sol les pommes de terre bien nettoyées de terre, et cela avec une vitesse égalant celle d'un cheval au pas. Pour s'acquitter de cette besogne et durer longtemps, il faut qu'une machine soit construite avec les meilleures matières premières et que l'exécution en soit hautement soignée. Aussi le constructeur, M. H. W. Doughten, à Moorestown, New Jersey (États-Unis) appelle-t-il cette machine la "Reine des Champs de Pommes de Terre."

Elle procure une économie au cultivateur, tant sur la première mise de fonds que dans la marche en service. Aussi la voit-on travailler avec profit dans presque tous les États ou Territoires des États-Unis. Les négociants au détail ne rencontrent guère de difficultés pour faire adopter du public une machine de cette nature: ils peuvent aisément démontrer la manière dont elle s'acquitte de la besogne en vue; aussi la vente est-elle facile.

M. Doughten fabrique également l'Exterminateur Instantané à Vermine, à Double Tube, représenté page 38, à l'usage des cultivateurs, jardiniers, fleuristes et éleveurs. C'est une seringue à pomme d'arrosoir d'un type différent de tous les autres qui se trouvent actuellement dans le commerce. Un coup de piston dans le corps de pompe, donné en pressant sur la poignée, fait jaillir le liquide de deux fortes pommes, la surface arrosée ayant deux pieds et demi (78 centim.) de rayon. Le réservoir, en cristal, n'est sujet ni à la rouille ni à l'oxydation; il permet à l'operateur de surveiller à tout instant le mélange et l'action des ingrédients. On peut faire usage de n'importe quelle composition liquide.

M. Doughten compose, pour l'emploi dans cette seringue, une préparation qui est sans doute la plus efficace qui existe pour détruire ou éloigner les mouches et les insectes. Cette "Huile Tue-Mouches," appliquée à la seringue à arrosoir, éloignera les mouches des bestiaux pendant les mois d'été, et l'expérience prouve qu'il en résulte une forte augmentation dans le produit en lait; cette augmentation atteint, dans certains cas, largement vingt pour cent.

Les négociants intéressés à cette catégorie d'articles feront bien de demander par lettre des renseignements complets, car le fabricant fait aux commerçants de tous les pays des propositions extrêmement avantageuses. Adresser toutes communications à M. H. W. Doughten, à Moorestown, New Jersey (États-Unis).

LES MOULINS-MOTEURS AMÉRICAINS À L'ÉTRANGER.

La maison Perkins Windmill Co., à Mishawaka, Indiana (États-Unis), figure au premier rang des compagnies industrielles américaines qui construisent des moulins à vent, réservoirs, tours, etc. Ses produits sont l'objet d'une demande universelle sur tous les points des États-Unis, et par suite l'activité règne en toute saison dans ces ateliers.

Depuis vingt ans le commerce de la maison Perkins avec l'étranger s'est accru dans des proportions énormes, en ce qui concerne les pompes mécaniques, et cette branche spéciale est devenue un facteur important dans la fabrication de la compagnie. Par contre, le moteur aérien à moulin à vent n'a été l'objet que de peu d'attention de la part de la clientèle étrangère. Quelques ordres isolés pour des moteurs ont cependant, au cours des cinq dernières années, créé une clientèle partout où ces moteurs ont été installés, et la compagnie s'est enfin vue obligée, la saison passée, de consacrer particulièrement son attention à cette partie de son industrie. Il y a si longtemps que sa marque de moteur à moulin à vent est connue du public américain, et la construction en est si bonne, si résistante sous tous les climats, que l'augmentation de production s'est trouvée à peine suffisante pour faire face à la demande.

La figure de la page 48 représente un moteur à moulin à vent de 14 pieds (4 m. 34) faisant marcher une pompe, un hache-paille, un moulin à graines fourragères, une meule à aiguiser et une scie à scier le bois. C'est par milliers que l'on compte les agriculteurs qui font aujourd'hui un emploi avantageux de ces moteurs; ils affirment tous que la besogne se fait de manière satisfaisante, et à meilleur marché qu'avec la main-d'œuvre payée au plus bas prix. Il suffit de bien tenir la trémie pleine de grain, et le moulin broiera, jour et nuit, toutes les espèces de grain qu'on lui donnera, graines fourragères pour le bétail aussi bien que céréales destinées à l'alimentation humaine.

La maison Perkins Windmill Company continue toujours à construire, à son usine de Mishawaka, Indiana (États-Unis), la collection complète de ses modèles bien connus de moulins à vent, tant en acier qu'en bois, pour moteurs de pompes à eau. La maison est toute disposée à entrer en correspondance avec tous les intéressés, en quelque partie du monde qu'ils résident. Elle est parfaitement outillée pour l'emballage et l'expédition de ses articles.

LE SEMOIR FAVORI DES CULTIVATEURS.

Les débuts de la construction du semoir "Favori des Cultivateurs" ("Farmers' Favorite," voir la figure page 50), remontent à plus d'un demi-siècle: et la machine représente aujourd'hui le résultat de toute la science et l'expérience de ses constructeurs, qui lui ont consacré leur attention exclusive depuis 1842. Il y a longtemps que la supériorité en a été reconnue aux États-Unis: et voici dix ans que, partout où on l'introduit à l'étranger, elle se place au premier rang: elle occupe aujourd'hui une place en vue dans le commerce d'exportation. Pour semer toute espèce de grains et de semences elle est sans rivales. Et son dispositif accessoire "Wizard" à refoulement, pour la distribution des engrais, dispositif qui est la propriété exclusive de la maison Bickford & Huffman Co., Constructeurs à Macedon, État de New-York (États-Unis), est également sans rival.

Citons quelques-uns des détails distinctifs du semoir "Farmers' Favorite." La batterie de trémies est en acier, non seulement le cadre, mais les moindres pièces: les tubes à grain eux mêmes sont en acier. Le bâti ou cadre de la machine, tout en acier, est très solide et symétrique; la construction en est telle que n'importe quelle pièce est facile à remplacer. Les roues ont des boites à cylindre, dispositif qui passe pour donner la traction la plus légère. Les essieux et tiges à balancier sont en acier fin très dur. Le levier centré possède un dispositif de reploiement. Le rendement de la pression est considérablement augmenté. Les barres de trainage sont courtes et très rigides, elles s'ajustent et se démontent facilement, et sont munies de coulants de tension. A citer encore les distributeurs de grain doubles à débit forcé; le dispositif "Wizard" de refoulement dans la trémie d'alimentation, système pratique qui donne les meilleurs résultats pour l'épandage régulier de tous les engrais; le régulateur de vitesse, exact, solide et simple, donnant à l'opérateur un champ considérable pour les quantités à semer: les tubes ou conducteurs à grain, tout en acier et indestructibles; les dents de herse à ressort, simples, solides, durables et d'excellent service.

Nous appelons particulièrement l'attention, au nom des constructeurs, sur les boites à cylindre des roues, lesquelles réduisent le frottement au minimum; sur les tubes à grain, en acier de canon à rubans, qui sont inusables et économisent au client les frais qu'entrainait le renouvellement continuel des tubes en caoutchouc. La reproduction de ces deux pièces, ainsi qu'une vue du semoir se trouvent sur page 50.

Outre son semoir classique à dents de herse, la maison Bickford & Huffman Co. fabrique également un semoir à disques. Les pièces accessoires portant soit les disques, soit les dents de herse, sont susceptibles de permutation sur le cadre et le corps d'un même semoir: de la sorte il est loisible au fermier de se procurer, moyennant un léger supplément de prix, deux semoirs pour un seul, semoir à disques et semoir à dents de herse.

Catalogues illustrés et prix-courants seront envoyés sur demande.

LE MOTEUR À VENT "DANDY" SE RECOAETRE DANS TOUS LES PEYS DU MOEDE.

Le moteur ou moulin à vent, à régulateur automatique, est un indigène des États-Unis, et pendant de longues années l'emploi en a été confiné à son pays d'origine; mais dans ces derniers temps il a peu à peu réussi à s'introduire à l'étranger, si bien qu'il est déjà des pays hors de l'Amérique du Nord où l'usage en est général, et qu'on en arrive partout très rapidement à le connaitre et à apprécier ses mérites. Ce qu'on aime chez lui, c'est son bon marché et sa longue durée de service.

Le moteur "Dandy" en acier galvanisé, construit par la maison Challenge Windmill and Feed Mill Co., à Batavia, Illinois (États-Unis), s'expédie pour ainsi dire dans toutes les régions du monde, et là où son apparition date d'un temps suffisamment long pour avoir établi ses qualités, ces expéditions se font en fortes quantités.

Les figures de la page 44 représentent un moteur "Dandy" avec tour d'acier, installé dans la Republique Argentine: il sert à pomper de l'eau dans un puits très profond et la refoule dans un réservoir situé à cinquante pieds au dessus du sol.

Un moteur aérien "Dandy" sur tour d'acier, installé à Birmingham (Angleterre), pompe l'eau d'arrosage pour un vignoble et un potager. Il existe plusieurs centaines de moteurs "Dandy" en service, et en bon service satisfaisant, sur divers points de la Grande-Bretagne.

Notre illustration montre également un moteur "Dandy" sur tour d'acier, installé dans une ferme d'élevage d'autruches, telle qu'il en existe tant dans l'Afrique du Sud. La photographie a été prise comme l'installation venait d'être terminée. C'est par centaines que l'on compte les moteurs "Dandy" qui se trouvent, avec leurs tours, dans les fermes et plantations de l'Afrique du Sud, et, pourrions nous ajouter, dans toutes les parties du monde civilisé, où ils sont en marche permanente et rendent les meilleurs services.

Le moteur "Dandy" est construit en acier laminé à froid de qualité supérieure et en fonte et fer forgé de toute première qualité ; les ailes et les bras sont galvanisés après construction terminée. Tout l'appareil est établi suivant des principes scientifiques, tout en étant simple et d'érection facile ; il se dérange malaisément, marche par la brise la plus douce et se comporte bien même par de véritables tempêtes : par le fait, il se rapproche plus du type absolument à l'épreuve de l'ouragan que tout autre modèle de moteur aérien en acier qui se soit jamais construit. Le poids entier du moulin repose sur un banc d'acier placé à 1m.10 au-dessous du sommet de la tour ; par conséquent il ne peut être emporté par le vent. Le moulin et la tour sont inséparables.

Le "Dandy" fait l'espoir et la joie du cultivateur. Il lui fournit de l'eau en abondance pour tous usages.

Le catalogue illustré de la maison contient une description complète de tous ses modèles différents de moteurs à vent en bois et en acier, comme de ses moulins à graines fourragères, égreneuses à maïs, coupe-tiges, bancs de scierie, moteurs à pétrole, balançoires de jardin en acier galvanisé, réservoirs-citernes en bois et en acier, pompes, conduites, garnitures, montures et accessoires, etc.

La maison se flatte de posséder l'usine la plus vaste et la plus complète qui soit au monde dans sa branche industrielle, et de produire dans cette catégorie de machines agricoles plus que tout autre fabricant au monde. Elle se fera un plaisir d'expédier son catalogue par la poste à tous ceux qui en feront la demande, et d'établir des agences pour tous les territoires non encore réservés. La maison correspond en toutes langues.

OUTILS A MAIN, DE CULTURE ET DE JARDINAGE.

MM. Sheble et Klemm, de Philadelphie, Pensylvanie (États-Unis), ont entrepris en 1850 la fabrication des outils à main et des outils de culture et de jardinage. Leurs nouveaux ateliers couvrent près de trois acres (1½ hectares) de terrain ; leur expérience de cinquante années a été mise à bon profit pour cette fabrication de la ferronnerie d'acier, et leurs bâtiments, installés conformément à leurs idées personnelles, sont tels qu'on peut s'attendre en confiance aux meilleurs résultats.

Les ateliers sont divisés en neuf bâtiments comprenant respectivement la forge, l'atelier de polissage et de cylindrage, l'atelier de préparation des ferrures, poignées et manches d'outil, l'usine de force motrice, l'atelier d'ajustage et de finissage, les magasins de stock et les bureaux, la maréchallerie et les écuries : certains de ces bâtiments sont encore subdivisés en plusieurs départements.

Dans l'installation de l'outillage mécanique, la maison a porté son choix exclusivement sur certaines machines que le jugement et l'expérience personnelle de ses chefs démontraient être les plus avantageuses pour leur industrie Ils se flattent de posséder l'usine la mieux montée et pourvue de l'outillage le plus moderne qui existe aux États-Unis pour la fabrication des outils à main et des outils de culture et de jardinage ; et il est douteux qu'il se trouve dans le vieux monde une usine qui puisse rivaliser avec la leur. Dans ces conditions, la maison est à même de fournir au commerce des articles de qualité et d'exécution soignée, absolument sans rivale.

Dans les articles de sa fabrication n'entrent que les meilleures matières premières qu'il soit possible d'obtenir pour cet objet ; leurs emmanchures sont d'une pièce et les dents forgées au marteau-pilon dans des blocs d'acier au lieu d'être étirées au laminoir comme c'est en général la pratique de certains fabricants.

Les fabricants de quincaillerie et ferronnerie ont adopté cette méthode de laminer les dent des outils plutôt que de les forger au marteau pilon, dans le but de diminuer les frais de fabrication ; mais la maison Sheble et Klemm s croit en mesure, avec le type de marteaux pilons qu'elle emploie dans ses ateliers, d fabriquer à meilleur compte que les autre maisons n'y arrivent avec leurs cylindres d laminage ; en même temps, elle produit ains des articles de qualité bien supérieure, car toute personne connaissant le travail de l'acier sait bien que la forge améliore la qualité de l'acier, tandis que le laminage tend à l'abaisser.

Avec son outillage actuel la maison est à même de produire journellement de 300 à 350 douzaines d'outils, fourches, sarcloirs, râteaux, etc., en différents modèles et qualités ; les principaux types sont les fourches de fenaison, à fumier, à orge et à paille, hoyaux-bêches et boneurs, fourches d'éclusier, houes à huitres, à coke, à charbon, à pierres cassées et à ballast, fourches de tannerie, houes à graines de coton, à navets et à betteraves, à pommes de terre et à fumier, râteaux de jardin, râteaux à ballast et à asphalte, sans compter d'autres modèles en grand nombre à destinations spéciales.

Les articles se répartissent en trois qualit Les meilleure porte une étiquette ornée du no de "Sheble & Klemm" et de la marque de f brique. La deuxième qualité, destinée à po voir aux demandes pour articles moins che que la première qualité, est étiquetée "Pe sylvania Fork Co." La troisième qual comprenant des articles à bas prix et né moins susceptibles d'excellent service, po l'étiquette "Eagle Tool Co."

La maison exporte ses articles à l'étrange depuis plus de quarante ans, et aujourd'hu plus de la moitié de sa fabrication s'expéd hors des États-Unis.

Elle est au courant des types et modèl préférés dans presque tous les pays ; des soin tout spéciaux sont donnés à l'emballage et l'expédition, lesquels se font de manière servir au mieux les intérêts de la clientè

La maison revendique l'invention et la brication exclusive des "Fourches et Hoya à Clef ;" on trouvera ce dispositif représen page 22, dans l'illustration reproduisant u fourche. Les articles de ce type portent u chape ajustée sur la racine des dents, et rivet traverse la chape, la ferrure, le man et la racine des dents, en sorte qu'il est i possible que la fourche ou la houe vienn branler dans son manche. Ce modèle d'ou jouit d'une réputation bien établie et d'u vente considérable.

Les râteaux de jardin en acier, que rep sente la figure de la page 38, sont part lièrement excellents : ils sont faits d'une s pièce d'acier sans parties soudées : les den sont droites et le dos construit tout spéci ment pour égaliser les surfaces. Les râte à asphalte de ce type sont très avantageux

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EXPORT IMPLEMENT AGE

PARA CIRCULAR EN EL EXTRANJERO SOLAMENTE.

Periódico Independiente, dedicado exclusivamente al fomento
del comercio de exportación en maquinaria para la Agricultura y lecherías, bombas, molinos de viento,
aperos de labranza y suministros á cortijos,
haciendas, ingenios de hacer azúcar,
sitios de labor etc.

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La auto dalladora (una dalladora que es propulsada sin la ayuda de caballos) está ya ofrecida en venta por los fabricantes americanos.

Una libra inglesa es algo menos de medio kilógramo. Es el peso legal de los Estados Unidos, y por eso es que lo usamos cuando se trata de pesos.

Empleamos el término de "América" en este periódico para significar los Estados Unidos, por abreviar, y suponemos que todos lo entenderán, sin más explicación.

No hay derechos de aduana en los Estados Unidos sobre los aperos de los demás países. El mundo entero está invitado á venir á vendernos aperos, porque nuestras manufacturas no temen competencia.

No dejen los lectores de escribir á los fabricantes americanos pidiéndoles lo que necesiten, sin temor de ser explícitos en pormenores, porque ellos tienen tantos deseos de complacer al parroquiano como éste de recibir sus artículos.

El comerciante que pueda influir en el agricultor para que compre algo que mejore su cultivo, aumenta el producto de la cosecha del cultivador, pone en circulación más dinero, y venderá á la postre más maquinarias y aperos agrícolas.

El comerciante extranjero vende aperos y maquinarias agrícolas para ganar una utilidad. El vende á todos los que desean comprar, y compra de todos los que venden aperos, con tal que sean convenientes. No debe pues favorecer á nadie, ni tener prejuicios, sino buscar lo mejor de lo mejor.

Los mejores agricultores son los que usan aperos que economizan trabajo. La mano de obra es costosa y aumenta el costo de la producción. Un buen agricultor que disponga de un apero bien acondicionado puede cultivar sus frutos más barato y con más facilidad que el agricultor que todo lo espera de su trabajo y del de su familia, sin la ayuda de aperos que economizan mano de obra.

En Europa se estila para las direcciones dar el nombre del fabricante con el número y la calle. En los Estados Unidos no siempre es necesario dar la calle y el número, pero el Estado habrá de mencionarse siempre después del nombre de la ciudad, de este modo: Señor John Smith, Philadelphia, Pa. (Pa., significa el Estado de Pensylvania), Estados Unidos de Norte América, puesto que los Estados Unidos comprenden muchos Estados, cada cual con su gobierno propio, aunque unidos en una sola nación. Por ejemplo hay en los Estados Unidos 23 pueblos que tienen el nombre de "Lafayette," pero no hay dos pueblos del mismo nombre en el mismo Estado.

Las exportaciones desde el primero de Enero próximo pasado, de palas, layas, azadas, horquetas, azadones, rastrillos, y en general todas las herramientas para labranza y hortaliza, adaptables para todos los suelos y climas, han sido de tal magnitud desde el primero de Enero de este año, que no es aventurado asegurar que los productos norteamericanos están colocándose rapidamente á la cabeza de sus competidores de otros países. El acero empleado en esta fabricación es excelente, como lo es en general el acero americano, y los métodos para templar y para unir las diferentes piezas entre sí, les dan una resistencia y una conveniencia para el trabajo que no pueden dejar de recomendarlas y granjaerles los favores, de la gente competente, en todos los países donde se les ha dado á conocer.

Los nombres de las casas mencionadas en las páginas 52 y 54 así como las mercancías que venden, están arreglados para la conveniencia de los compradores. Estos establecimientos son de los principales de los Estados Unidos: ellos son estrictamente de confianza tienen muchas facilidades para su fabricación y atienden prontamente á los encargos que se les hacen. Dichas casas entienden perfectamente el comercio de exportación y despachan esmeradamente todos los pedidos extranjeros. El "Export Implement Age" es tenido en gran predicamento en sus oficinas, y cualquiera recomendación ó mención que se haga del periódico será un incentivo para mayor prontitud por parte de ellos en complacer al comprador. Los informes que les pidan los compradores extranjeros relativos á los aperos americanos y maquinarias agrícolas, serán enviados por ellos con prontitud. Escríbase en cualquier idioma que se prefiera.

La gran ayuda que el empleo de las bombas ha reportado á los agricultores en los últimos años, ha producido una gran variedad de manufacturas de éstas, y no está de más recomendar á los compradores mucho cuidado en la elección, muy especialmente donde se requiere de ellas un servicio especial. Los agentes europeos y los exportadores norteamericanos pueden con gran provecho consultar las columnas de nuestro periódico en lo que respecta á bombas para pozos artesianos, bombas centrífugas, rotativas, de riego en llovizna, bombas de mano y bombas para molinos de viento. Algunos artículos se pueden separar y empacar en un espacio reducido, éstos son los especiales para pozos llanos ú hondos, que se pueden adaptar para usar á la mano ó con motor de molino de viento, y se les puede fijar válvulas sin necesidad de levantar la bomba ó de bajar dentro del pozo. Nuestros fabricantes americanos están preparados para responder á todas las emergencias.

Las maquinarias para abrir pozos han llegado á ser un importante artículo de exportación. Poder abrir un pozo á poco costo y con el menor gasto de fuerza y la menor cantidad de aparatos, es un problema muy digno de ser tenido en mientes por el taladrador de pozos. Por motivo de roturas de las piezas, con frecuencia se presentan demoras y pérdidas, cuando los compradores no han procedido con prudencia al comprar, no adquiriendo sino aparatos que les briden garantías. Hay fabricantes americanos de maquinarias para perforar pozos, cuya garantía es absoluta y cuyas manufacturas son conocidas en el mundo entero.

La "Milwaukee Harvester Company" ó sea Compañía de Segadoras de Milwaukee, Wis., Estados Unidos de Norte América, ha exhibido sus máquinas en algunas pocas de las principales exposiciones europeas de aperos agrícolas, en la pasada estación de verano, y ha obtenido varios premios, entre los cuales figura una medalla de oro, ganada en la Exposición de París, una de plata otorgada por la Sociedad de Agricultura de Peterborough, en Inglaterra, y una de especial significación: esto es una medalla de plata con que fué premiada por la Sociedad Real de Agricultura, de Inglaterra, en su concurso anual verificado este año en York. Esta última recompensa no fué obtenida sino después de severos experimentos en centeno largo y verde, y ha sido la única recompensa dedicada por aquella Sociedad á las máquinas de segar.

Hay agricultores que son progresistas y previsivos en muchas cosas, pero suelen descuidar una ó dos de las instalaciones necesarias para la conveniencia de su explotación, y por esa causa pierden las utilidades que por otro lado alcanzan. Esta observación se refiere especialmente á la fuerza motriz para enfardelar. No son pocos los agricultores, tanto dentro como fuera del país, que por el hecho de no tener trabajo para tener ocupada su prensa por mucho tiempo, la consideran como un aparato demasiado costoso; y sin embargo hay tantas donde escoger, movidas ora por brazos, por caballo ó por vapor. Una prensa de enfardelar es una gran nesesidad. Algunas de las prensas de enfardelar que se presentan en el mercado, merecen toda confianza. Están bien hechas y siempre listas para el uso. Como economizan tiempo, espacio y material, debieran formar parte de las instalaciones de todas las explotaciones progresistas dentro y fuera del país.

No son los dueños de lecherías de los más tardios en comprender y adoptar las nuevas separadoras á mano. Algunas de éstas merecen especial mención. El mayor aumento en la producción de mantequilla que los mejores de estos aparatos reportan, presto pagarán la diferencia del costo de los aparatos inferiores. La separadora mecánica fué uno de las últimas producciones del genio inventivo, para la industria lechera. Mejoras trás mejoras han seguido sin interrupción hasta el punto á que ha llegado, que mucho se asemeja á la perfección. En algunas comarcas del extranjero existen preocupaciones contra la separadora, dando por resultado que los agentes que reunen sus esfuerzos para darla bien á conocer, tropiezan con dificultades para su venta. La actual separadora norteamericana, no puede sino ganar en ser conocida donde quiera que se la brinda oportunidad de demostrar sus excelentes cualidades.

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Le "Dandy" fait l'espoir et la joie du cultivateur. Il lui fournit de l'eau en abondance pour tous usages.

Le catalogue illustré de la maison contient une description complète de tous ses modèles différents de moteurs à vent en bois et en acier, comme de ses moulins à graines fourragères, égreneuses à maïs, coupe-tiges, bancs de scierie, moteurs à pétrole, balançoires de jardin en acier galvanisé, réservoirs-citernes en bois et en acier, pompes, conduites, garnitures, montures et accessoires, etc.

La maison se flatte de posséder l'usine la plus vaste et la plus complète qui soit au monde dans sa branche industrielle, et de produire dans cette catégorie de machines agricoles plus que tout autre fabricant au monde. Elle se fera un plaisir d'expédier son catalogue par la poste à tous ceux qui en feront la demande, et d'établir des agences pour tous les territoires non encore réservés. La maison correspond en toutes langues.

OUTILS A MAIN, DE CULTURE ET DE JARDINAGE.

MM. Sheble et Klemm, de Philadelphie, Pensylvanie (États-Unis), ont entrepris en 1850 la fabrication des outils à main et des outils de culture et de jardinage. Leurs nouveaux ateliers couvrent près de trois acres (1½ hectares) de terrain; leur expérience de cinquante années a été mise à bon profit pour cette fabrication de la ferronnerie d'acier, et leurs bâtiments, installés conformément à leurs idées personnelles, sont tels qu'on peut s'attendre en confiance aux meilleurs résultats.

Les ateliers sont divisés en neuf bâtiments comprenant respectivement la forge, l'atelier de polissage et de cylindrage, l'atelier de préparation des ferrures, poignées et manches d'outil, l'usine de force motrice, l'atelier d'ajustage et de finissage, les magasins de stock et les bureaux, la maréchallerie et les écuries; certains de ces bâtiments sont encore subdivisés en plusieurs départements.

Dans l'installation de l'outillage mécanique, la maison a porté son choix exclusivement sur certaines machines que le jugement et l'expérience personnelle de ses chefs démontraient être les plus avantageuses pour leur industrie Ils se flattent de posséder l'usine la mieux montée et pourvue de l'outillage le plus moderne qui existe aux États-Unis pour la fabrication des outils à main et des outils de culture et de jardinage; et il est douteux qu'il se trouve dans le vieux monde une usine qui puisse rivaliser avec la leur. Dans ces conditions, la maison est à même de fournir au commerce des articles de qualité et d'exécution soignée, absolument sans rivale.

Dans les articles de sa fabrication n'entrent que les meilleures matières premières qu'il soit possible d'obtenir pour cet objet; leurs emmanchures sont d'une pièce et les dents forgées au marteau-pilon dans des blocs d'acier au lieu d'être étirées au laminoir comme c'est en général la pratique de certains fabricants.

Les fabricants de quincaillerie et ferronnerie ont adopté cette méthode de laminer les dents des outils plutôt que de les forger au marteau-pilon, dans le but de diminuer les frais de fabrication; mais la maison Sheble et Klemm se croit en mesure, avec le type de marteaux-pilons qu'elle emploie dans ses ateliers, de fabriquer à meilleur compte que les autres maisons n'y arrivent avec leurs cylindres de laminage; en même temps, elle produit ainsi des articles de qualité bien supérieure, car toute personne connaissant le travail de l'acier sait bien que la forge améliore la qualité de l'acier, tandis que le laminage tend à l'abaisser.

Avec son outillage actuel la maison est à même de produire journellement de 300 à 350 douzaines d'outils, fourches, sarcloirs, râteaux, etc., en différents modèles et qualités; les principaux types sont les fourches de fenaison, à fumier, à orge et à paille, hoyaux-bêches et boueurs, fourches d'éclusier, houes à huitres, à coke, à charbon, à pierres cassées et à ballast, fourches de tannerie, houes à graines de coton, à navets et à betteraves, à pommes de terre et à fumier, râteaux de jardin, râteaux à ballast et à asphalte, sans compter d'autres modèles en grand nombre à destinations spéciales.

Les articles se répartissent en trois qualités. Les meilleure porte une étiquette ornée du nom de "Sheble & Klemm" et de la marque de fabrique. La deuxième qualité, destinée à pourvoir aux demandes pour articles moins chers que la première qualité, est étiquetée "Pennsylvania Fork Co." La troisième qualité, comprenant des articles à bas prix et néanmoins susceptibles d'excellent service, porte l'étiquette "Eagle Tool Co."

La maison exporte ses articles à l'étranger depuis plus de quarante ans, et aujourd'hui plus de la moitié de sa fabrication s'expédie hors des États-Unis.

Elle est au courant des types et modèles préférés dans presque tous les pays; des soins tout spéciaux sont donnés à l'emballage et à l'expédition, lesquels se font de manière à servir au mieux les intérêts de la clientèle.

La maison revendique l'invention et la fabrication exclusive des "Fourches et Hoyaux à Clef;" on trouvera ce dispositif représenté, page 22, dans l'illustration reproduisant une fourche. Les articles de ce type portent une chape ajustée sur la racine des dents, et un rivet traverse la chape, la ferrure, le manche et la racine des dents, en sorte qu'il est impossible que la fourche ou la houe vienne à branler dans son manche. Ce modèle d'outils jouit d'une réputation bien établie et d'une vente considérable.

Les râteaux de jardin en acier, que représente la figure de la page 38, sont particulièrement excellents: ils sont faits d'une seule pièce d'acier sans parties soudées; les dents sont droites et le dos construit tout spécialement pour égaliser les surfaces. Les râteaux à asphalte de ce type sont très avantageux.

EXPORT IMPLEMENT AGE

PARA CIRCULAR EN EL EXTRANJERO SOLAMENTE.

Periódico Independiente, dedicado exclusivamente al fomento
del comercio de exportación en maquinaria para la Agricultura y lecherías, bombas, molinos de viento,
aperos de labranza y suministros á cortijos,
haciendas, ingenios de hacer azúcar,
sitios de labor etc.

PRECIO DE SUSCRIPCIÓN:

Por un año, porte franco, . - - - - 1 Peso

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La misma firma publica el "Implement Age" y el
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La auto dalladora (una dalladora que es propulsada sin la ayuda de caballos) está ya ofrecida en venta por los fabricantes americanos.

Una libra inglesa es algo menos de medio kilógramo. Es el peso legal de los Estados Unidos, y por eso es que lo usamos cuando se trata de pesos.

Empleamos el término de "América" en este periódico para significar los Estados Unidos, por abreviar, y suponemos que todos lo entenderán, sin más explicación.

No hay derechos de aduana en los Estados Unidos sobre los aperos de los demás países. El mundo entero está invitado á venir á vendernos aperos, porque nuestras manufacturas no temen competencia.

No dejen los lectores de escribir á los fabricantes americanos pidiéndoles lo que necesiten, sin temor de ser explícitos en pormenores, porque ellos tienen tantos deseos de complacer al parroquiano como éste de recibir sus artículos.

El comerciante que pueda influir en el agricultor para que compre algo que mejore su cultivo, aumenta el producto de la cosecha del cultivador, pone en circulación más dinero, y venderá á la postre más maquinarias y aperos agrícolas.

El comerciante extranjero vende aperos y maquinarias agrícolas para ganar una utilidad. El vende á todos los que desean comprar, y compra de todos los que venden aperos, con tal que sean convenientes. No debe pues favorecer á nadie, ni tener prejuicios, sino buscar lo mejor de lo mejor.

Los mejores agricultores son los que usan aperos que economizan trabajo. La mano de obra es costosa y aumenta el costo de la producción. Un buen agricultor que disponga de un apero bien acondicionado puede cultivar sus frutos más barato y con más facilidad que el agricultor que todo lo espera de su trabajo y del de su familia, sin la ayuda de aperos que economizan mano de obra.

En Europa se estila para las direcciones dar el nombre del fabricante con el número y la calle. En los Estados Unidos no siempre es necesario dar la calle y el número, pero el Estado habrá de mencionarse siempre después del nombre de la ciudad, de este modo: Señor John Smith, Philadelphia, Pa. (Pa., significa el Estado de Pensylvania), Estados Unidos de Norte América, puesto que los Estados Unidos comprenden muchos Estados, cada cual con su gobierno propio, aunque unidos en una sola nación. Por ejemplo hay en los Estados Unidos 23 pueblos que tienen el nombre de "Lafayette," pero no hay dos pueblos del mismo nombre en el mismo Estado.

Las exportaciones desde el primero de Enero próximo pasado, de palas, layas, azadas, horquetas, azadones, rastrillos, y en general todas las herramientas para labranza y hortaliza, adaptables para todos los suelos y climas, han sido de tal magnitud desde el primero de Enero de este año, que no es aventurado asegurar que los productos norteamericanos están colocándose rapidamente á la cabeza de sus competidores de otros países. El acero empleado en esta fabricación es excelente, como lo es en general el acero americano, y los métodos para templar y para unir las diferentes piezas entre sí, les dan una resistencia y una conveniencia para el trabajo que no pueden dejar de recomendarlas y granjaerles los favores, de la gente competente, en todos los países donde se les ha dado á conocer.

Los nombres de las casas mencionadas en las páginas 52 y 54 así como las mercancías que venden, están arreglados para la conveniencia de los compradores. Estos establecimientos son de los principales de los Estados Unidos; ellos son estrictamente de confianza, tienen muchas facilidades para su fabricación y atienden prontamente á los encargos que se les hacen. Dichas casas entienden perfectamente el comercio de exportación y despachan esmeradamente todos los pedidos extranjeros. El "Export Implement Age" es tenido en gran predicamento en sus oficinas, y cualquiera recomendación ó mención que se haga del periódico será un incentivo para mayor prontitud por parte de ellos en complacer al comprador. Los informes que les pidan los compradores extranjeros relativos á los aperos americanos y maquinarias agrícolas, serán enviados por ellos con prontitud. Escríbase en cualquier idioma que se prefiera.

La gran ayuda que el empleo de las bombas ha reportado á los agricultores en los últimos años, ha producido una gran variedad de manufacturas de éstas, y no está de más recomendar á los compradores mucho cuidado en la elección, muy especialmente donde se requiere de ellas un servicio especial. Los agentes europeos y los exportadores norteamericanos pueden con gran provecho consultar las columnas de nuestro periódico en lo que respecta á bombas para pozos artesianos, bombas centrífugas, rotativas, de riego en llovizna, bombas de mano y bombas para molinos de viento. Algunos artículos se pueden separar y empacar en un espacio reducido, éstos son los especiales para pozos llanos ú hondos, que se pueden adaptar para usar á la mano ó con motor de molino de viento, y se les puede fijar válvulas sin necesidad de levantar la bomba ó de bajar dentro del pozo. Nuestros fabricantes americanos están preparados para responder á todas las emergencias.

Las maquinarias para abrir pozos han llegado á ser un importante artículo de exportación. Poder abrir un pozo á poco costo y con el menor gasto de fuerza y la menor cantidad de aparatos, es un problema muy digno de ser tenido en mientes por el taladrador de pozos. Por motivo de roturas de las piezas, con frecuencia se presentan demoras y pérdidas, cuando los compradores no han procedido con prudencia al comprar, no adquiriendo sino aparatos que les briden garantías. Hay fabricantes americanos de maquinarias para perforar pozos, cuya garantía es absoluta y cuyas manufacturas son conocidas en el mundo entero.

La "Milwaukee Harvester Company" ó sea Compañía de Segadoras de Milwaukee, Wis., Estados Unidos de Norte América, ha exhibido sus máquinas en algunas pocas de las principales exposiciones europeas de aperos agricolas, en la pasada estación de verano, y ha obtenido varios premios, entre los cuales figura una medalla de oro, ganada en la Exposición de París, una de plata otorgada por la Sociedad de Agricultura de Peterborough, en Inglaterra, y una de especial significación: esto es una medalla de plata con que fué premiada por la Sociedad Real de Agricultura, de Inglaterra, en su concurso anual verificado este año en York. Esta última recompensa no fué obtenida sino después de severos experimentos en centeno largo y verde, y ha sido la única recompensa dedicada por aquella Sociedad á las máquinas de segar.

Hay agricultores que son progresistas y previsivos en muchas cosas, pero suelen descuidar una ó dos de las instalaciones necesarias para la conveniencia de su explotación, y por esa causa pierden las utilidades que por otro lado alcanzan. Esta observación se refiere especialmente á la fuerza motriz para enfardelar. No son pocos los agricultores, tanto dentro como fuera del país, que por el hecho de no tener trabajo para tener ocupada su prensa por mucho tiempo, la consideran como un aparato demasiado costoso; y sin embargo hay tantas donde escoger, movidas ora por brazos, por caballo ó por vapor. Una prensa de enfardelar es una gran nesesidad. Algunas de las prensas de enfardelar que se presentan en el mercado, merecen toda confianza. Están bien hechas y siempre listas para el uso. Como economizan tiempo, espacio y material, debieran formar parte de las instalaciones de todas las explotaciones progresistas dentro y fuera del país.

No son los dueños de lecherías de los más tardíos en comprender y adoptar las nuevas separadoras á mano. Algunas de éstas merecen especial mención. El mayor aumento en la producción de mantequilla que los mejores de estos aparatos reportan, presto pagarán la diferencia del costo de los aparatos inferiores. La separadora mecánica fué uno de las últimas producciones del genio inventivo, para la industria lechera. Mejoras trás mejoras han seguido sin interrupción hasta el punto á que ha llegado, que mucho se asemeja á la perfección. En algunas comarcas del extranjero existen preocupaciones contra la separadora, dando por resultado que los agentes que reunen sus esfuerzos para darla bien á conocer, tropiezan con dificultades para su venta. La actual separadora norteamericana, no puede sino ganar en ser conocida donde quiera que se la brinda oportunidad de demostrar sus excelentes cualidades.

INTENTIONAL SECOND EXPOSURE

SEPARADORAS DE CREMA.

Grandes mejoras que se han realizado en el arte de separar la crema de la leche y en la explotacion de las lecherías.

Si toda la leche que se gasta en los Estados Unidos en un año pudiera convertirse en un río, podría formar un lago de tal magnitud y profundidad, que en el podría flotar toda una escuadra de buques de guerra. La importancia de los intereses de las lecherías en los Estados Unidos no se puede imaginar sino por personas que posean datos sobre la materia; en ese ramo está comprendida la producción de leche, queso, y mantequilla, amén de los productos en que se utilizan los desechos, tales como la leche fermentada y el suero, que sirven para ceba de cerdos, lo cual los engorda muchísimo, y de ellos retiran gran beneficio las quintas.

Las maquinarias mejoradas para lecherías han revolucionado los métodos de fabricación del queso y de la mantequilla. Los dueños de queseras que ántes estimaban las vacas, al compararlas unas con otras, por la cantidad de mantequilla que producian en un día ó en una semana, no tienen ahora ninguna dificultad para estimar la cantidad de grasa de mantequilla que contiene la leche, por medio del probador de leche.

Todos los vaqueros conocen los riesgos de la fabricación de la mantequilla en la quinta y las dificultades para cuajar la leche y separar la crema. El sumo cansancio de los brazos, el tiempo indefinido que se gasta en esperar que cuaje la mantequilla, y luego, la limpieza con agua hirviendo y el manejo de los ustensilios, además del trabajo de fabricación de la mantequilla, todo á la mano: esto jamás se podrá olvidar. Se ha dicho que el arte de hacer mantequilla con las mantequilleras de antaño, ha contribuido en gran manera para desterrar de las quintas á los mozos de labranza, trayéndolos á las ciudades.

La leche años atrás, después de ordeñada se ponía á enfriar; se colocaba en vasijas á propósito, la crema era separada, y luego que estaba en condiciones, se la batía para hacer la mantequilla. Esta serie de procedimientos necesitaba tiempo, y tanto la leche como la crema estaban á la merced de los cambios atmosféricos, de temperatura y de la más ó menos profundidad de las vasijas. Cuando se hacía la batida para hacer la mantequilla, era á las veces la temperatura de la leche demasiado baja ó demasiado alta, porque no se usaba termometro, y la mantequilla podía salir pronto ó dilatarse hasta una hora; pero con los aparatos mejorados de hoy, para la fabricacion de la manteca, el trabajo puede hacerse con mejor perfección y menos dificultades.

Desde la invención de la primera separadora de crema, se le han hecho muchos cambios y mejoras. Todas las lecherías ó cremerías que han usado una separadora, se puede decir que la han recibido gratis, puesto que su importe ha sido pronto economizado en el desnate, en la batida de la mantequilla, en hielo y en tiempo. Resulta la leche aereada, el monto de producto de la mantequilla se aumenta y es más pura y más uniforme, y se evitan los fuertes gastos de almacenage, de manipulación, de cuajo, de desnate y otros pormenores, amén de que la leche desnatada por quedar más fresca que cuanda se emplean otros métodos, resulta un alimento superior para las terneras, los cerdos y las aves de corral. En vez de las aguas sucias que resultan de la friega de las vasijas, se alimentan hoy los marranos con sana y buena nutrición, de perfecta conveniencia para ellos.

No habia sido posible hacer mantequilla en gran escala hasta que se inventó la separadora de crema. Antes se necesitaba tanto gasto de trabajo para hacer un kilógramo ó una libra de mantequilla como para la elaboración de dos ó tres kilógramos, y como entonces se hacía la mantequilla por lotes muy pequeños, siendo industria de pequeñas familias, de ahí resultaba que la producción de mantequilla exijía el trabajo de tantas personas como kilógramos ó libras de mantequilla. Con la separadora de crema, es posible separar la crema de centenares de vacas en muy breve tiempo, siendo el costo de la mano de obra reducidísimo, al paso que el procedimiento da también mayores garantías de limpieza, etc.

La mantequilla obtenida por la separadora también es más uniforme. Antes se llenaban cuñetes ó cubos con la mantequilla que provenía de varias quintas, y resultaba la mantequilla estriada, mezclada con leche cortada, mal salada, ó amarga según las manos que habían elaborado cada lote; y el empacador ó comisionista veíase á veces obligado á batir de nuevo y amasar juntas las diferentes clases para poder obtener una calidad uniforme, y aún así sucedía que al hallarse en el conjunto alguna cantidad de mantequilla de inferior clase, no dejaba ésta de afectar todo el contenido del cuñete.

Al decir que la separadora ayuda en producir una mantequilla de cualidad superior, no echamos en olvido la mantequillera y la batidora de mantequilla. Bien que de la manipulación de la leche y de la crema dependa en gran parte el éxito de toda la operación, se hacen también mantequilleras mejoradas grandes y pequeñas, las cuales trabajan por distintos sistemas; también hay batidoras de mantequilla, balanzas automáticas, cremeras, caserolas de todas clases, cubos recibidores, aparatos para lavar con agua caliente y asear los utensilios, cubos de forma mejorada y otros accesorios para la elaboración de la mantequilla.

UN "RAEDOR DE CIELO" AMERICANO.

En los Estados Unidos hay varios centenares de edificios de gran elevación, conocidos con el nombre de "raedores de cielo," algunos de los cuales tienen hasta 300 piés de elevación. Como un modelo de cómo se puede hacer un edificio de hierro y acero, en muy breve tiempo, insertamos aquí el grabado que representa el edificio llamado "North American Building" que está actualmente en fábrica en Filadelfia (véase página 27).

Ha despertado mucha curiosidad la presente extraña apariencia de dicho edificio, que parece que baja de las nubes hacia la tierra en vez de elevarse de la tierra hacia las nubes. Tiene veinte pisos y desde el piso décimo hasta el décimo octavo, se extiende una sólida fachada de obra de piedra, y á primera vista, está enorme masa no está mantenida en su sitio por ningún sostén aparente. Por debajo están solamente los espacios de la armazón en un piso abierto. En realidad, las condiciones de este edificio señalan un nuevo paso en la construcción de los "raedores de cielo." Estos inmensos edificios, se diferencian de los demás en que su armazón ó esqueleto es de acero. En los edificios más pequeños, toda la construcción depende de los cimientos y cada piso descansa sobre el piso anterior, al paso que en los "sky-scrapers," todo está como colgado de la armazón de acero, y cada piso es independiente de los demás: es decir que la obra de acero tiene un rodete en la solera para cargar la obra de piedra de cada piso. Las ventajas de este sistema saltan á la vista. En vez de seguir el tardío procedimiento de edificar hacia arriba, empezando por el piso bajo, puede el constructor empezar por cualquier piso, á donde el material puede llevarse con la mayor facilidad. La obra de piedra del edificio "North American" se empezó en dos sitios—en el piso bajo y en el piso décimo—no tan sólo por ahorrar tiempo, sino además por el área limitada de que se podía disponer en la calle para la entrega de los materiales. Tan luego como estuvo lista la armazón de acero, se colocaron los pisos de concreto, y al llegar el material, era inmediatamente subido al piso á que estaba destinado.

Otro rasgo especial de este nuevo edificio ha sido la rapidez con que se ha levantado. El problema más serio fué cavar los cimientos que bajan á treinta y cinco piés debajo del nivel de la calle sobre una capa de arena, porque los cimientos del edificio debían estar separados é independientes de los que iban á sostener el peso de las maqninias en el subsuelo ó bodega para evitar las vibraciones.

A pesar de estas dificultades, estará el edificio dispuesto para el uso el primero de Noviembre próximo, menos de un año después de haber dado el primer barrazo, y las 250 oficinas que contiene, estarán dispuestas para ser ocupadas en el mes de Febrero, y será acaso entonces este edificio el más alto de Filadelfia.

UN TRIBUTO Á LOS APEROS DE LOS ESTADOS UNIDOS.

Un periódico canadense que trata de aperos agrícolas, y se publica en Sarnia, Canada, con el título de "Farm Machinery," ó sea "Maquinarias para Granjas," está actualmente tratando la cuestión de derechos de aduana sobre los aperos americanos, y dice que á menos de castigar los aperos americanos con un derecho de entrada de 20 por ciento no dejarán los agricultores canadenses de comprar sus aperos en los Estados Unidos. Los datos que trae á cuenta son los siguientes:

"En el año de 1899, importaba el Canadá por valor de $1,095,000 de aperos y maquinarias agrícolas; de esta cantidad, desembolsaron los agricultores de Ontario, la suma de $347,133 en segadoras, $252,900 los agricultores de Manitoba, y $49,671 los agricultores de los territorios del Noroeste. Con la antigua tarifa de 35 por ciento el valor de las segadoras, dalladoras, arados y sembradoras de granos que se importaron en 1894, fué de $128,593; de donde se deduce que, desde que en 1895, se rebajó la tarifa de 35 á 20 por ciento, los guarismos de 1894 han tenido un crecimiento de más de ocho tantos. Este aumento un las importaciones es mucho mayor que el que resulta de las sustituciones de viejas maquinarias por nuevas y de la abertura de nuevos territorios agrícolas, y revela una descrecencia en las ventas de los manufactureros del país."

¿"A qué causa se debe atribuir tan desproporcionado aumento en las importaciones? ¿Será porque las maquinarias americanas están mejor ideadas? No parece ser esta la causa probable. ¿Será que las maquinarias americanas resultan más baratas después de pagos los derechos de importación, que las canadenses? Si es así, ¿cómo podría ser esto posible si no fuera la materia prima más barata y los métodos americanos de fabricación menos costosos? ¿Será porque en los Estados Udidos, el fabricante se preocupa más del negocio y dispone de organizaciones más eficaces para la venta? De todas estas cuestiones, una se desprende desde luego, y es que los fabricantes americanos pueden producir más baratas sus maquinarias, y que la tarifa do 20 por ciento, no es suficiente para impedir que entren á competir con buen éxito, en su propio terreno, con los fabricantes canadenses de maquinarias."

A pesar de la tarifa aduanera con que están castigados los artículos de los Estados Unidos, las importaciones de aperos en el Canadá aumentan todos los años. Bien que no convengamos en todas las razones que se exponen en el mencionado artículo, de él se desprende un hecho, y es que los agricultores canadenses pueden comprar sus aperos en los Estados Unidos más barato que los fabricados en su propio país, á pesar de existir en el Canadá muchas fábricas importantes, aprovechando la protección que les da la alta tarifa, la cual debiera ser suficiente para impedir la entrada de los aperos extranjeros. Lo que sucede es que el agricultor canadense sabe lo que le conviene, y donde lo puede conseguir á su entera satisfacción; por eso compra en las fábricas de los Estados Unidos, á despecho de las fábricas que en su país le rodean y de los derechos aduaneros que la protegen. Estos datos revelan perfectamente que las maquinarias y aperos agrícolas americanos están hechos con esmero, resultan baratos, y son eficaces y duraderos, porque de otro modo no habría demanda para ellos.

EL MOLINO DE VIENTO "DANDY" HA TOMADO POSESIÓN DE TODOS LOS PAÍSES DEL MUNDO.

El molino de viento de regulador automático, es oriundo de los Estados Unidos, y por muchos años no se usó sino en este país, pero ultimamente ha sido gradualmente introducido en los países extranjeros, y actualmente se usa extensamente en varias partes del mundo y además se está dando á conocer rapidamente, despertando gran interés en todos los países extranjeros. Se le aprecia sobretodo por su poco costo y su durabilidad.

El molino de acero galvanizado "Dandy" fabricado por la casa Challenge Windmill and Feed Mill Co., Batavia, Ill., Estados Unidos de Norte América, es exportado á casi todas las partes del mundo—y en grandes cantidades en aquellos países donde se ha llevado más antes y ha podido probar sus méritos incontestables.

El grabado que publicamos en la página 44, representa un molino de viento "Dandy" y una torre de acero, erigidos en la República Argentina, que extraen agua por medio de la bomba, de los pozos más profundos y la elevan hasta un tanque de cincuenta piés de elevación sobre la superficie.

Un molino con su torre de acero marca "Dandy" cerca de Birmingham, Inglaterra, sacando agua por medio de la bomba para un viñedo y una hortaliza. Hay varios centenares de molinos "Dandy," trabajando con buen éxito en diferentes lugares de la Gran Bretaña.

Aquí representamos un molino "Dandy" con su torre de acero y una de las muchas granjas criadoras de avestruces en el Sur de Africa. Se acababa de terminar el edificio cuando se tomó la fotografía. Se cuentan por centenares los molinos "Dandy" con torre de acero, que trabajan constantemente á la completa satisfacción de sus dueños, en las haciendas del Sur de Africa y lo mismo podríamos decir de todos los países civilizados del mundo.

El molino "Dandy" está hecho de un acero enrollado frío, de primer orden y de la primera clase de hierro colado y hierro forjado; las aspas y las veletas han sido galvanizadas después de terminadas. Bien que construido según los principios científicos, es sin embargo sencillo y fácil para armar, sin que se pueda descomponer: se mueve al menor soplo de viento, y cuida de sí mismo en los ventarrones; y en resumen viene á ser el más perfecto de los molinos absolutamente á prueba de tempestades. Todo el peso del molino gravita sobre una plancha de acero á 3½ piés debajo de la parte superior de la torre, y por lo tanto no puede ser llevado por el viento. El molino y la torre son inseparables.

El "Dandy" es la alegría y la esperanza del agricultor y suministra gran abundancia de agua para todos los objetos.

Los catálogos ilustrados de esta Compañia dan completas descripciones de todas las clases de molinos de madera y de acero, molinos de pasto, desgranadoras de maiz, cortadoras de maloja, mesas de acerrar, motores de gasolina, columpios galvanizados para praderas, tanques de madera y de acero, bombas, tubería y accesorios, etc.

La Compañía se jacta de tener la mayor y más completa fábrica de esta clase en el mundo y de ser los fabricantes más en grande de esta especie de maquinarias agrícolas que existe, y se complacerá en enviar sus catálogos á todos los que los pidan y de establecer agencias en todos los países donde aún no sea conocida. Se solicita pues correspondencia en todos los idiomas.

LA SEMBRADORA FAVORITA DEL AGRICULTOR.

La fabricación de la sembradora de granos "Farmers Favorite" ó sea la "Favorita del Agricultor," que está representada en nuestros grabados, empezó hace medio siglo, y dicho apero tal como se fabrica en el día de hoy reune toda la experiencia y los conocimientos adquiridos por sus fabricantes, quienes le han dedicado toda su atención desde el año de 1842. Sus excelentes condiciones han sido reconocidas hace tiempo en este país, y en los últimos diez años, en los países extranjeros en que se ha introducido se ha colocado en primera fila y ocupa hoy un puésto preferente entre los artículos importados. Para sembrar granos y semillas de todas clases no tiene rival. Para repartir abonos, no hay como su aparato de suministro forzado marca "Wizard," de la propiedad exclusiva de los fabricantes Bickford & Huffman Co., de Macedon, New York, Estados Unidos de Norte América.

Algunos de los rasgos más notables de la "Farmers Favorite," son los siguientes. Es una sembradora toda de acero, no sólo la armazón sino todas las piezas, puesto que hasta los tubos para los granos son de acero; la armazón toda de acero, es de gran fuerza y simetría, y tan bien construida que cualquiera de sus piezas puede ser reemplazada prontamente; ruedas con coginetes de rodillo; tiro de lo más ligero que se conoce; muelles y timones de acero fino y duro; palanca central con aparato dobladizo; presión de fuerza muy superior; barras de trasmallo cortas y de gran rigidez, que se ponen y se quitan con facilidad, con agarraderas de trasmallo de tensión; dobles distribuidoras de suministro forzoso para granos; fertilizadora "Wizard," de suministro forzoso, práctica y segura en la operación de repartir esmeradamente toda clase de abonos; esmerado aparato de velocidad, fuerte y sencillo, que procura ancha hilera de cantidades; tubos para los granos ó sea conductores enteramente de acero é indestructibles; sencillos azadones de resorte, de gran eficacia y duración.

Los fabricantes han dedicado especial atención á los coginetes de rodillo en las ruedas, reduciendo la fricción á su más mínima expresión; y así mismo á los tubos para granos de cinta de acero, los cualos no se deterioran nunca, evitando al comprador el gasto de la constante renovación de los tubos de caucho. Ambos figuran en nuestros grabados, y hay también un grabado que representa la sembradora. (Véase página 50.)

Además de la sembradora ordinaria de azadón, fabrica también la Bickford & Huffman Co., una sembradora de disco.

Los apéndices de disco y los de azadón son permutables en la armazón de una misma sembradora, por manera que por un pequeño gasto adicional puede el agricultor poseer dos sembradoras, en una: una sembradora de azadón y otra de disco.

Los catálogos ilustrados y precios corrientes se enviarán á quienes los soliciten.

HERRAMIENTAS DE MANO PARA GRANJAS Y HORTALIZA.

Los Señores Sheble & Klemm, Philadelphia, Pennsylvania, Estados Unidos de Norte América, empezaron la fabricación de las herramientas de mano para granjas y hortalizas en el año de 1850. Sus nuevos edificios ocupan un espacio de cerca de tres acres y ellos han puesto en práctica sus treinta años de experiencia en la fabricación de artículos de acero; según sus ideas, edificaron sus edificios de manera que les dieran los mejores resultados.

La fábrica esta dividida en nueve edificios que constan de taller de fragua, taller de pulimento, taller de birolas y preparación á la mano, edificio para el almacenaje de los mangos, edificio de los motores, taller de máquinas y taller de conclusión, edificio del almacén y oficinas, herrería y caballeriza; varios de estos edificios se dividen en diferentes departamentos.

Al proveer de maquinarias sus edificios, estos Señores escogieron unicamente las máquinas que en su juicio y experiencia les darían los mejores resultados para sus productos y por eso se congratulan porque poséen una fábrica que creen es la más moderna y mejor provista del mundo en artículos de mano para granja y hortaliza en los Estados Unidos; y se puede suponer que en el viejo mundo tampoco la habrá igual. Con facilidades como estas, no es extraño que puedan ellos brindar al comercio artículos de primera clase y de obra perfecta.

Todos los artículos que fabrica esta Sociedad son del mejor material que se puede conseguir para el objeto y son hechos de sólidas varas; las púas de las horquetas son forjadas á mazo y sacadas de una sólida pieza de acero y no extraídas por rollos como lo estilan actualmente algunos fabricantes.

Hay fabricantes de artículos de acero que han dado en arrolar las púas de las horquetas en vez de forjarlas á mazo, con el objeto de disminuir el gasto de fabricación, y creen que por el estilo de martillo que usan en sus manufacturas, pueden fabricar más barato que los demás fabricantes lo hacen con rollos, y al mismo tiempo producir artículos de calidad muy superior, pero todos los que están familiarizados con las obras de acero saben que la acción de la fragua mejora la calidad del acero, al paso que el rollo tiene una tendencia á deteriorar la calidad.

Con las facilidades de que dispone actualmente esta Compañía puede producir diariamente de 300 á 350 docenas de Horquetas, Garfios, Rastrillos, etc., de distintos estilos y formas, de los cuáles los principales se fabrican especialmente para heno y estiércol, para remover la tierra, para calles, para cebada y paja, para esparcir, para ostras, coke, carbón, piedra y balasto, para curtidores, para semillas de algodón, horquetas para nabos y para remolacha, garfios para papas ó patatas y para estiércol, para hortaliza, para balasto y para asfalto, y muchas otras especies para trabajos especiales.

Son tres las clases en que están divididos estos artículos. La mejor clase lleva rótulos con el nombre de "Sheble & Klemm" y la marca de fábrica. La segunda clase está destinada á satisfacer los pedidos de un precio inferior á la primera y lleva el rótulo de "Pennsylvania Fork Co." La tercera clase se compone de buenos y útiles artículos y lleva el rótulo de "Eagle Tool Co." La Compañía viene exportando sus artículos á los países extranjeros hace más de cuarenta años, y en la actualidad más de la mitad de sus manufacturas están destinadas al extranjero.

No es pues extraño que esté familiarizada con los estilos y formas que exijen los diferentes países y con los requisitos para el empaque, al cual dedican esmerada atención, asi como á las expediciones, para que sean lo más ventajosas para el parroquiano.

Esta Sociedad es la inventora y única manufacturera de las "Horquetas y Garfios trabados," como lo representa el grabado de horqueta inserto en la página 38. Estos artículos tienen un regatón colocado en el extremo de las púas y un roblón que atraviesa el regatón, la birola, el mango y el extremo de las púas, haciendo imposible que la horqueta ó el garfio se aflojen del mango. Todos estos artículos tienen sólida fama y su venta se extiende á todos los países.

LAS EXPOTACIONES DE MOLINOS MOTORES.

La casa Perkins Windmill Co., de Mishawaka, Ind., Estados Unidos de Norte América, es una de las principales Compañías de los Estados Unidos para la fabricación de molinos de viento, tanques, torres, etc. De los Estados Unidos recibe esta Compañía pedidos de todas partes, por manera que su fábrica está ocupada en todas las estaciones.

En los últimos veinte años han aumentado extraordinariamente las exportaciones de Perkins en molinos de bomba, y este ramo ha llegado á ser un factor importante de la Perkins Windmill Company, pero poca atención se le había dedicado al molino motor. Un pedido ocasional de molinos motores cinco años há, produjo cierta cantidad de pedidos donde quiera que estos molinos fueron colocados, y por eso se decidió la Compañía en la última estación, á dedicar especial atención á este ramo de su negocio. Su molino de viento motor es ya tan conocido de los norteamericanos y está también construido y hecho para gran duración en todos los climas, que el incremento que ha tenido la fabricación de estos artículos apenas ha dado abasto á la demanda.

El grabado publicado en la página 48, representa un molino motor que saca agua por medio de la bomba, muele y pica pasto, amuela herramientas y asierra madera. Se cuentan ya por millares los agricultores que tienen en uso estos molinos, con gran provecho, y dicen que pueden hacer su trabajo de modo satisfactorio y más barata que lo que les costaría la mano de obra más barata Todo lo que se requiere, es mantener la tolva llena de granos, y el molino molerá sin cesar, dia y noche, toda clase de granos, para alimento del ganado ó de la gente.

La Perkins Windmill Company fabrica también en su establecimiento de Mishawaka Indiana, Estados Unidos de Norte América un completo surtido de sus bien conocidos molinos de acero y ne madera para sacar agua por medio de la bomba. Recibirá con gusto correspondencia de todas las personas interesadas, de todas las partes del mundo. Dispone de instalaciones de primer orden para empacar y despachar sus artículos.

LA REINA DE LAS CAVADORAS PARA PAPAS Ó PATATAS.

La laboriosa tarea de cosechar papas ó patatas, con su correspondiente gasto de mano de obra y sus desperdicios, es ahora cosa facilísima por el empleo de un apero que hace todo el trabajo con perfección, y cuyo precio está al alcance de todos los labradores. Esta maquinaria puede trabajar en casi todas las clases de suelos. Tiene dedos de acero vibradores, que separan las papas ó patatas de las basuras y las disponen á cada lado del surco bien á la vista; dos ruedas (una de lantera y otra tracera) aseguran igual profundidad, tiro ligero, y ruedas de constante rodar. En la página 38 se verá el grabado.

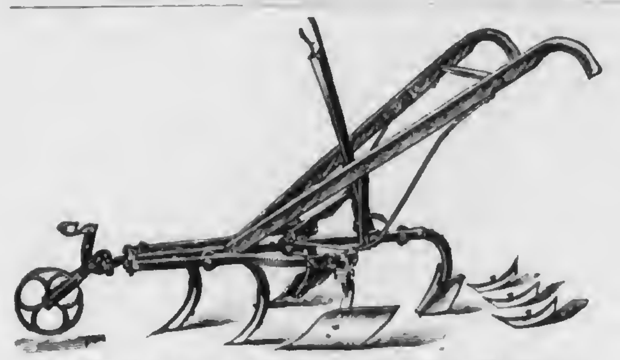
Está construido por principios estrictamente científicos para este trabajo especial, y resuelve el problema de cosechar las papas ó patatas limpias de tierra y con tanta rapidez como camine el caballo. Una máquina que trabaje así y dure bastante tiempo, tiene que ser del mejor material y de esmerada fabricación. El nombre que el fabricante de esta máquina, el Señor H. W. Doughten, de Moorestown, New Jersey, Estados Unidos de Norte América, le ha dado, es "Reina de la Sementera de Papas ó Patatas."

Es muy económica para el agricultor, no sólo por su costo sino por lo que produce su trabajo. Se la ve trabajar con muy buenos resultados en casi todos los Estados y Territorios de la Unión Norte Americana. Los comerciantes en aperos, poco tendrán que hacer para introducir dicha máquina, porque es fácil demostrar lo bien que trabaja, ayudando así á la venta.

Señor Doughten fabrica también el Exterminador Instantaneo de Insectos de doble tubo, que está representado en nuestra página 38 para uso de los agricultores, hortaliceros, jardineros y ganaderos. Es un pulverizador como no hay otro en el mercado hoy. Una bajada del mango produce dos grandes lloviznas que cubren un radio de dos y medio piés. El recipiente es de vidrio y por lo tanto no se puede oxidar y permite al operario en cualquier momenio que lo desée, inspeccionar la mezcla de los ingredientes y cómo trabaja el aparato. Toda clase de mezclas de líquidos se puede usar.

Para su pulverizador fabrica Señor Doughten un líquido que es probablemente lo que más conviene para matar, ó apartar las moscas y los insectos. Dicho "Flykiller Oil," ó sea "Aceite mata moscas" usado con el pulverizador, apartará las moscas del ganado en los meses de verano; los experimentos han dado por resultado un gran aumento en la producción de leche, aumento que ha llegado á veces hasta veinte por ciento.

Los comerciantes que se interesen en esta clase de artículos pueden escribir pidiendo más datos, por que las propuestas que el fabricante hace á los vendedores en todas partes, es de gran attractivo. La correspondencia se deberá dirijir á Mr. H. W. Doughten, Moorestown, New Jersey, Estados Unidos de Norte América.



The No. 6 "Iron Age" Horse Hoe and Cultivator, with Plain Wheel.

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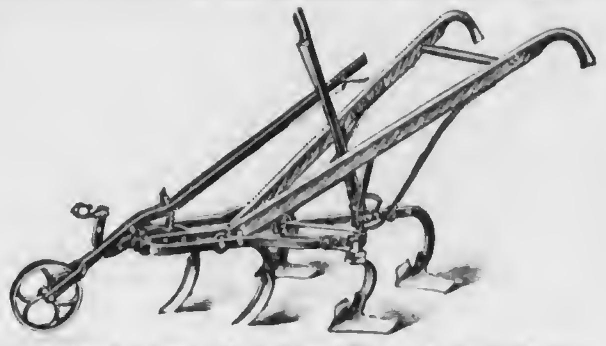
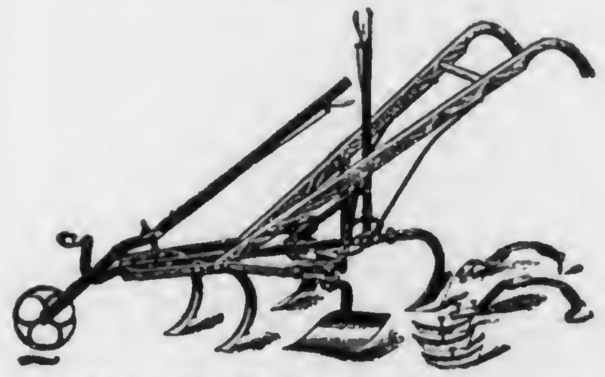


The No. 6 "Iron Age" Horse Hoe and Cultivator Equipped for Level Cultivation.

The No. 1 "Iron Age" Double Wheel Hoe.

The No. 6 "Iron Age" Combined Wheel Hoe, Hill and Drill Seeder.

The No. 4 "Iron Age" Combined Seed Drill and Wheel Hoe.



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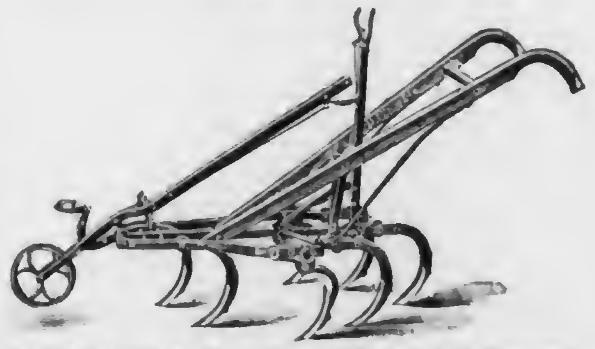
Works Established 1836. Correspondence Solicited.



The No. 6 "Iron Age" Horse Hoe as a Cultivator, shown with "Fucrow-Closing" Attachment.

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The above cut shows the U. S. Coffee Huller, Manufactured by the Salem Iron Works, Salem, N. C., U. S. A.

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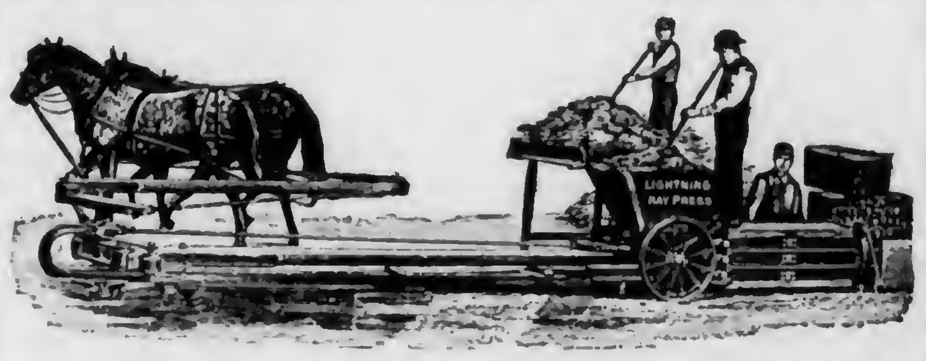

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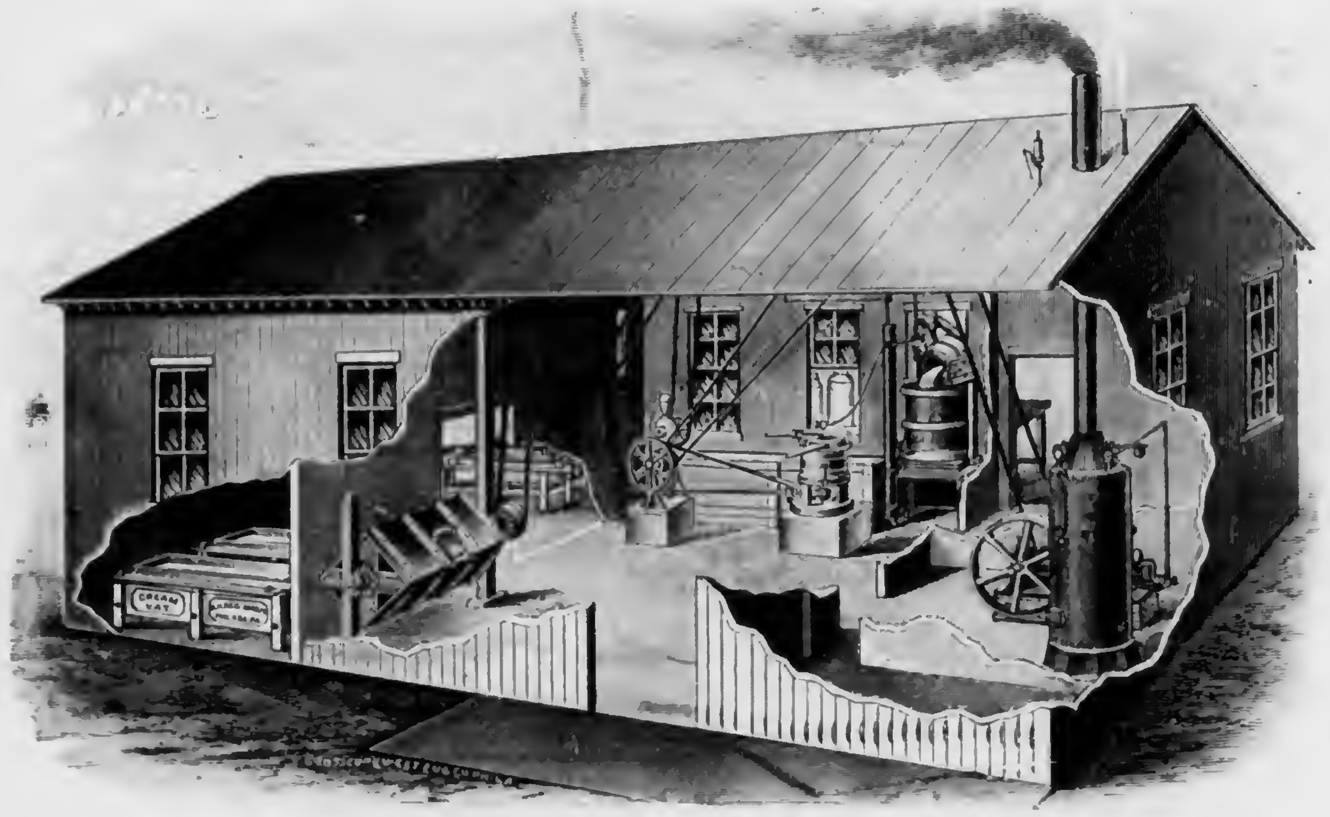
CREAM SEPARATORS.

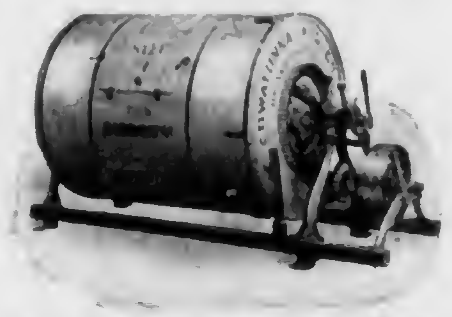
The Great Improvements That Have Been Made in Separating Cream from Milk and in Managing Creameries.

If all the milk used in the United States in one year could be turned into a stream it would form a lake deep and wide enough to float a whole fleet of battleships. The magnitude of the United States dairy interests cannot be conceived by one not informed in that direction, as it includes milk, cheese, butter and the products from the waste materials, as the buttermilk and whey are utilized in the production of pork, being fed to swine, from which is derived a large revenue on farms.



Design of American Creamery by A. H. Reid, Philadelphia, Pa., U. S. A.

The improvements in dairy appliances have revolutionized dairy methods. The farmer who formerly compared one cow with another, and estimated her capacity by the amount of butter she produced in a day or week, now finds it not at all difficult to estimate the amount of "butter fat" in the milk with the aid of a milk tester.



Disbrow Combined Churn and Butter Worker.
Creamery Package Co., Chicago, Ill., U. S. A.

Every farmer knows the hardships of butter-making on the farm and the difficulties in setting the milk and raising the cream. The backaches and tired arms, the never-ending time for the butter to come, and the cleaning, scalding and handling of the utensils, with the working of the butter, all by hand, will never be forgotten. It has been claimed that churning with the old-time churn has done more to drive the boys away from the farms to the cities than anything else.

The milk was formerly taken from the cow, cooled, set in pans or some other suitable vessels, the cream skimmed off, allowed to ripen, and then churned. These several processes required time, and both the milk and cream were subject to the influence of atmospheric changes, the temperature and the depth of the vessels. When churning for butter sometimes the temperature of the milk or cream was too low, or too high, for the thermometer was not used, and the butter would come soon or perhaps not for an hour, but with the improved appliances of to-day, for making butter, the work can be done more perfectly and with less difficulty.

Since the introduction of the first cream separator many changes and improvements have been made. Every dairy or creamery that has used a separator has literally received it free of charge, as it saves in skimming, in churning, in ice, and in time. The milk is aerated, the amount of butter is increased, the product is purer and more uniform, and the heavy expense of storehouses, handling, setting, skimming and other details are avoided, while the skim milk, being sweeter and fresher than by the old method, is superior food for calves, swine and poultry. There is no filthy swill for pigs, but a wholesome food which is always highly relished.

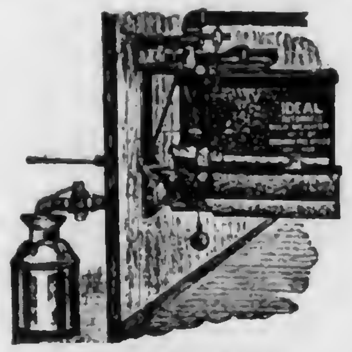
It was not possible to make butter on a large scale until the cream separator came. It required as much labor to churn a kilogram (or pound) of butter in the old way as it did two or three kilograms, and as butter was made in small lots and by different families, it required almost as many persons as there were kilograms, or pounds, of butter to produce the article, but with the cream separator it is possible to separate the cream from the milk of hundreds of cows in a short time, the cost of human labor being at a minimum, while the process is also done under much better conditions as to cleanliness, etc.

Separator butter is also uniform. Formerly the butter from many farms was put in one keg or tub, the butter being streaked, full of buttermilk, not properly salted, or bitter, according to the farm from which each lot came, and the packer or shipper was sometimes forced to work all the different kinds over again, in one mass, before he could have it of uniform quality, and even then should a few kilograms (or pounds) of inferior butter be in the whole it would affect the quality of the entire tub.

Nor have prices been reduced because of the separator. Formerly there was so much bad butter put on the market that prices were variable, and while the best butter brought very high prices yet it was scarce, although the market was overflowing with the poor article. The separator permits the dairyman to make better butter, because the odors, filth and delays in the barn no longer interfere where the separator is used, and the demand has increased, because consumers who would not use poor butter are willing to buy that which is good, the separator really increasing the demand, the consequence being that butter is higher to-day than formerly.

When we state that the cream separator assists in the production of better butter, we do not forget the churn and butter-worker. It is the handling of the milk and cream, upon which everything depends, but there are also improved churns, small and large, that work under various devices; also butter-workers, automatic scales, cabinet creameries, pans of all kinds, receiving vats, arrangements for scalding and cleaning the utensils, improved tubs and other accessories to butter-making.

The American manufacturers believe that they have added improvements in cream separators that warrant them in requesting European dealers and dairymen to give them a trial. With the increase in efficiency and perfection the cost is made lower, and it is safe to claim that no country surpasses the United States in excellence of cream separators.



Ideal Skim-milk Weigher.
Creamery Package Co., Chicago, Ill., U. S. A.

American separators, churns, etc., have a wide reputation. There are hundreds of butter factories in the United States, and the farmers have learnt which separators and churns are good and which to reject. When it is given out that certain separators are used in the great American factories it may

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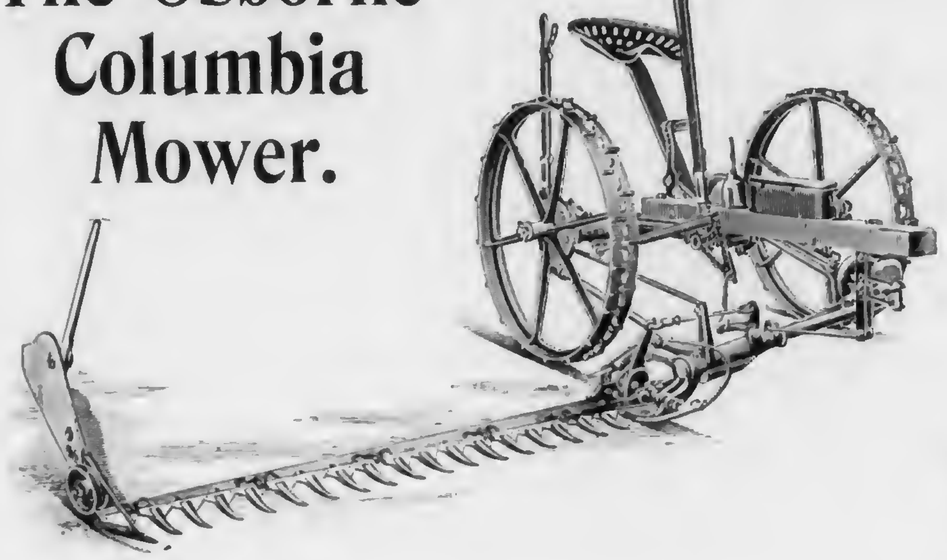

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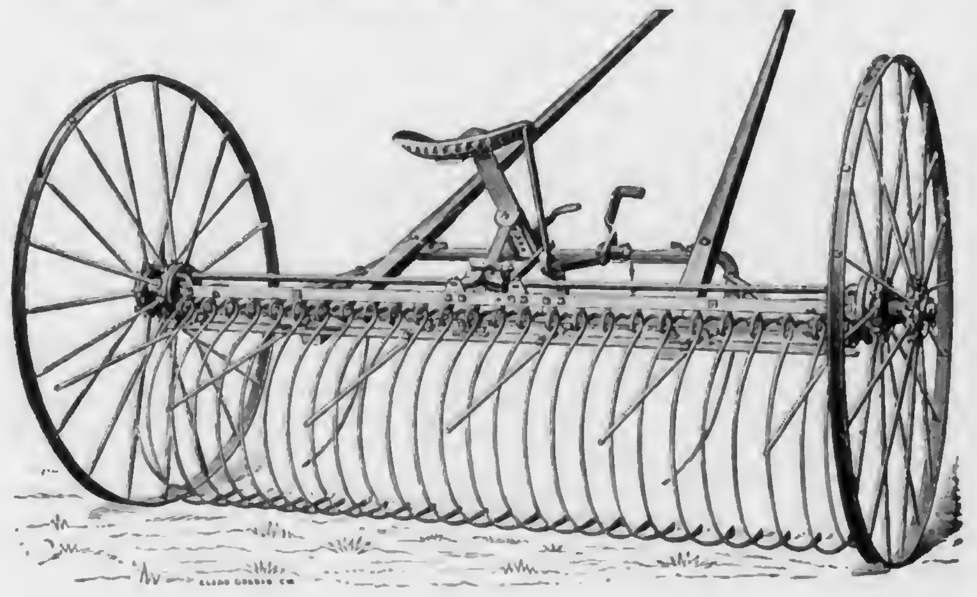
Perfect Draft, no side or neck weight.

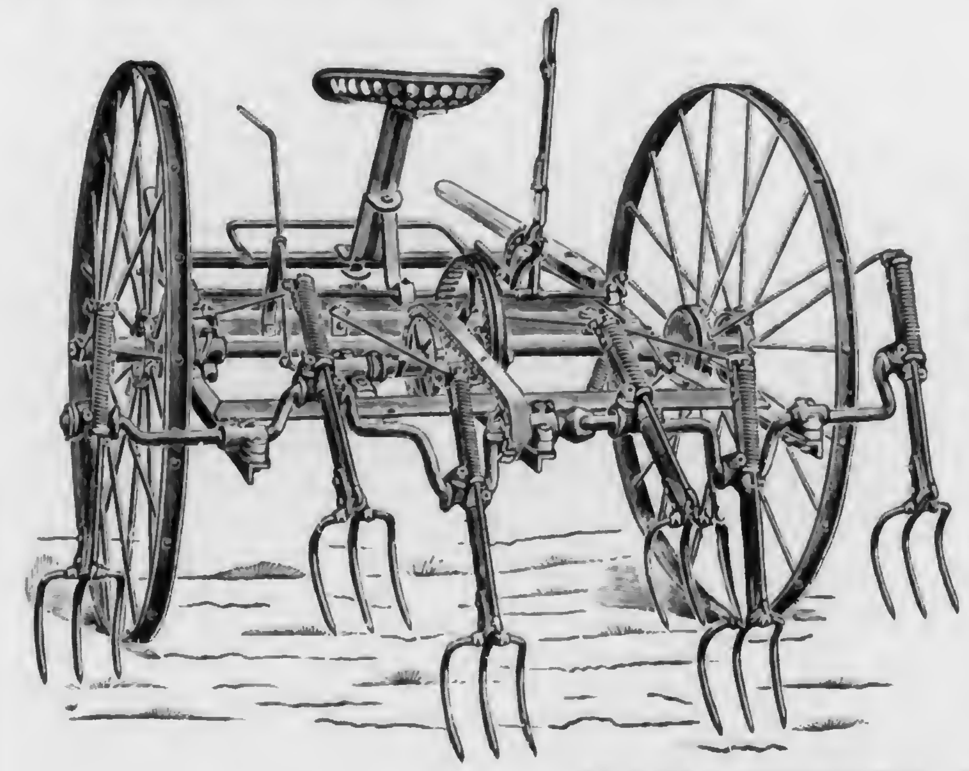
The Osborne ALL-STEEL Rake.



Special Features of the Osborne Rake.

Rake Head will not warp, sag or rot.
Wheels, Dump Rods, and all wearing parts are interchangeable, giving the wear of two rakes.
Wheels are strong; draft frame is one solid piece.
Seat is adjustable to driver, man or boy.
Dump is perfect; draft light.
Floating Check Teeth prevent hay from rolling.

The Osborne Tedder.



Special Features of the Osborne Tedder.

CENTRE DRIVE; each fork gets the power of both wheels.
SOLID CRANK SHAFT; the forks can not get out of their motion, but are steady in their stroke, no two forks striking the hay at once.
Cold-rolled Steel Shafting running in roller bearings.

BRANCH HOUSES ABROAD:

LONDON, ENGLAND, Hell Yard, 58 City Road.
PARIS, FRANCE, 38 Rue de Flandre.
ODESSA, RUSSIA, Polizei-Strasse No. 21.
CAPE TOWN, SOUTH AFRICA.
BUENOS AYRES, SOUTH AMERICA.
MONTEVIDEO, SOUTH AMERICA.
MELBOURNE, VICTORIA.
SYDNEY, NEW SOUTH WALES.
BREMEN, GERMANY.
INVERCARGILL, NEW ZEALAND.

MAIN OFFICE AND FACTORY:

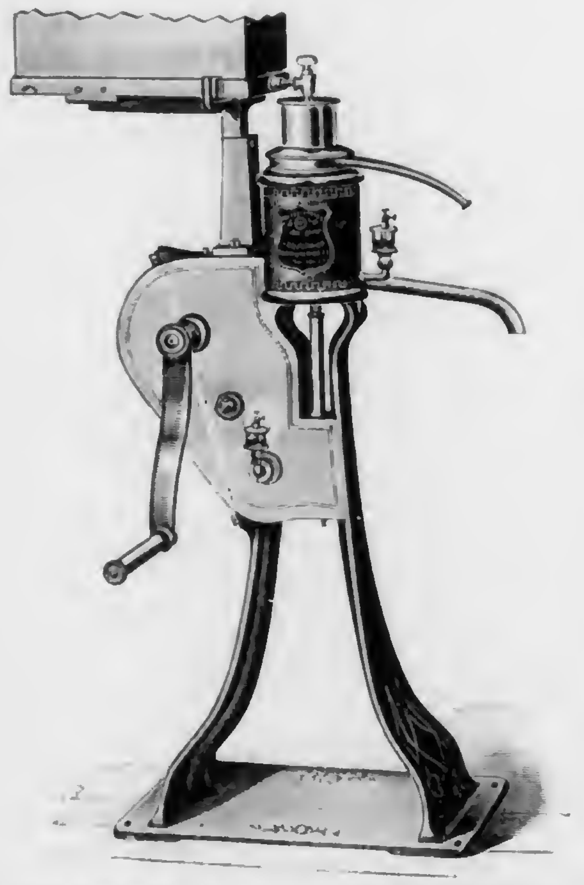
D. M. OSBORNE & CO., Auburn, N.Y., U.S.A.

be depended upon that they are the best to be had and that they will perform all that is claimed for them.

Both the factory separating and the cream gathering systems are practiced in the United States. By the cream gathering plan the skim milk is fed fresh and warm to stock, only the cream being sent to the factory. In some localities "skimming stations" are established where farmers take their whole milk to be separated before sent to the factory. Cream ssparators are therefore used on the farms as well as at stations or factories.

Type of Separator as made by P. M Sharples, West Chester, Pa., U.S.A.

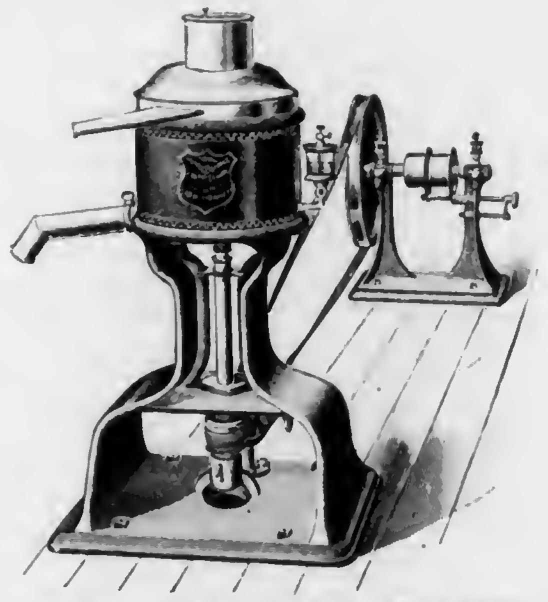
European dairymen are not behind in their knowledge of butter-making, and it is acknowledged that they are adopting all the latest appliances, while the United States and Canada are also making rapid strides in the march of progress. There are various designs of separators used in the United States, and they have been tried and tested at home and also in Europe. What the manufacturers of American cream separators claim is that they have years of experience, and also advantages which permit them to place separators on the market which cannot be excelled, and at prices which are satisfactory.


Type of Separator as made by Vermont Farm Machine Co., Bellows Falls, Vt., U. S. A.

It will pay to write to American manufacturers for descriptive and illustrated catalogues and learn of the advantages offered.

THE ECONOMY OF THE REAPER AND BINDER.

The special reason which called binders into existence, namely, the difficulty of obtaining manual labor, becomes more acute every day, and at the rate this difficulty is increasing the time is not far distant when there will be no choice in the matter, and the only way to tie corn will be by machinery. The exact economy effected by using a binder must, of course, be calculated by every man for himself. It may be said roughly, however, that the binder will displace seven harvest hands, and this may mean anything from £1 to 30s. a day, according to the cost of labor locally. At the present time the difficulty may be to get manual labor at any price, and when this is the case and the corn is waiting, who shall assess the value of a machine that will render the farmer to some extent independent of harvest hands? There is a chance of recovering the price of a machine in the first season, for if the owner gets his own corn cut in good time there is often an opportunity of cutting for hire, at from 5s. to 6s. an acre, the hirer finding horses. It is desirable, perhaps, to get experience by hiring at first, and it is well to see and compare the binders of several different makers at work before deciding which will best meet one's own requirements. In the case of small farms it might sometimes be found practicable to share a machine with one or more neighbors. In the case of a large farmer with a considerable acreage of corn, the purchase of one or more binders can hardly fail to be good policy. It is difficult to say what is the actual acreage of corn that would justify the purchase of a binder. Every man must judge this also for himself. But supposing the machine costs £50 (and a good one can be had for less than £40), and supposing it saves £1 a day when at work, less than a week's work would pay good interest on the purchase money, plus depreciation, and therefore it seems as if about fifty or sixty acres would warrant the investment. The fact remains, however, that a man who has given a good binder a fair trial does not often revert to the old system of harvesting.—"London Times."


Type of Separator as made by Vermont Farm Machine Co., Bellows Falls, Vt., U. S. A.

GRAIN CROP OF THE WORLD.

The estimate of the Hungarian minister of agriculture, Dr. Ignatius de Darii, of the world's crops, shows that the Hungarian crops have improved since the statement last June. The grain is ripening, and the yield of wheat is estimated at from 4 to 5 per cent. less than in 1899; that of rye at some 22 to 22 per cent. less; that of barley at from 15 to 16 per cent. less, nnd that of oats from 13 to 14 per cent. less. The crea own in winter and summer wheat is 5,610,000 yokes (8,877,300 acres) and the yield is 4,522,779,360 pounds, a decrease of 1,820,000 metersontos (24,719,040 pounds).

Type of Separator made by P. M. Sharples, West Chester, Pa., U. S. A.

Maize is satisfactory, the yield being 35,000,000 metersontos, an increase of 500,000 metersontos.

This year's crop of wheat is estimated at 850,000,000 to 870,000,000 hectolitres; oats, at 1,085,000 to 1,100,000 hectolitres; maize, at 979,000,000 to 992,000,000 hectolitres.

At the time of sowing, the stocks in hand were: Wheat, 70,000,000 to 80,000,000 hectolitres; rye, 29,000,000 to 30,000,000 hectolitres; barley, 8,000,000 to 10,000,000; maize, 28,000,000 to 35,000,000 hectolitres.

WEST & HAHN PHILA.
Type of Separator as made by A. H. Reid, Philadelphia, Pa., U. S. A.

The average yearly consumption is estimated at: Wheat, 926,000,000 to 953,000,000 hectolitres; rye, 520,000,000 to 540,000,000; barley, 327,000,000 to 346,000,000; oats, 1,100,000,000 to 1,143,000,000, and maize, 1,051,000,000.

McCORMICK
WINS AT PARIS

The McCormick Harvesting Machine Company, of Chicago, Ill., U. S. A., has been awarded the Grand Prize on Harvesting Machines at the Paris Exposition. This is the highest award.

The McCormick Company also received the highest award, a gold medal, on binder twine, for the superior quality of its product. Special twine machinery from the celebrated McCormick twine mill was exhibited to the jury and awarded a medal.

The McCormicks have received the largest number of awards, as well as the highest awards made to any American exhibitor. In addition to the Gra nd Prize on Machines and Gold Medal on twine, they have received two medals in the department of metallurgy for superiority in forming metals into special parts for machines; in the department of machinery a medal for factory machinery, and also silver and bronze medals in other classes, six medals in all, besides the Grand Prize.

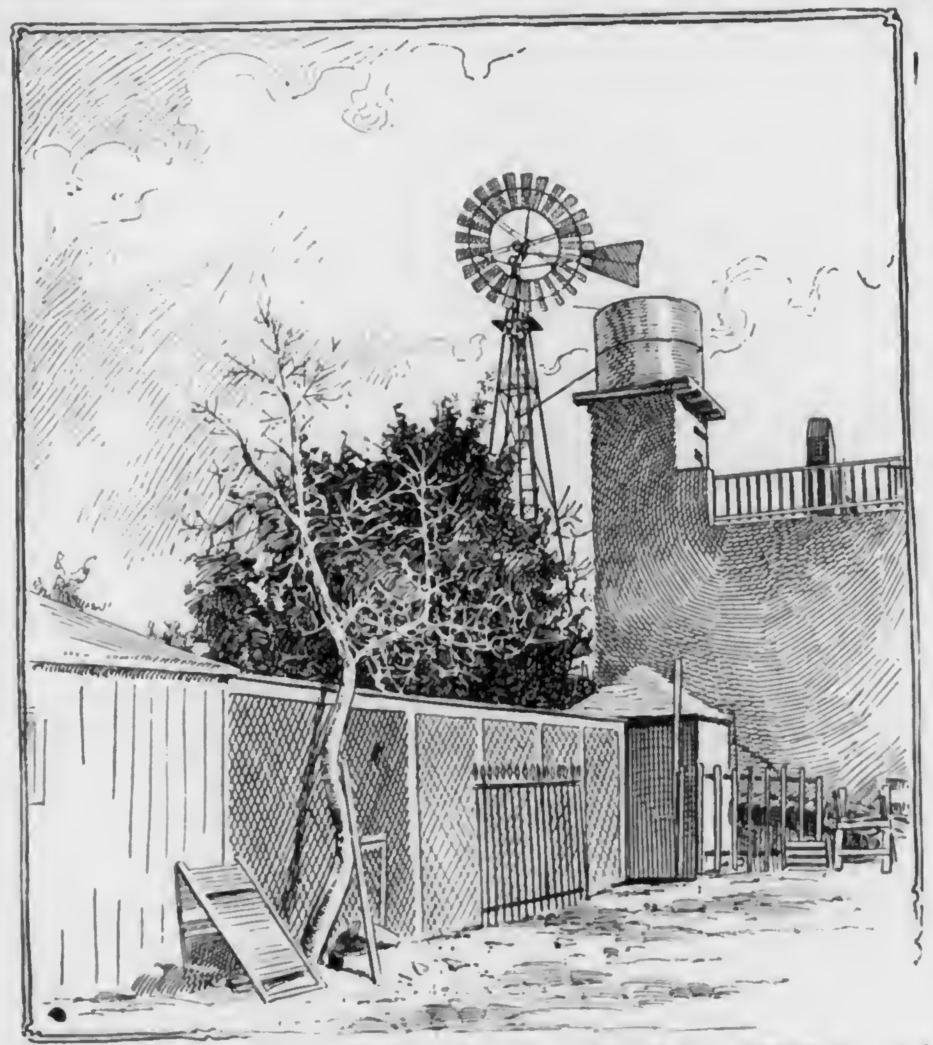
The International juries of the Exposition have recognized the great revolution wrought by McCormick machines, and this large number of awards is a great triumph for America.

WINS THE GREAT FIELD TRIAL

In addition to winning these awards, the Gold Medal and 200 francs, the single highest award for binders, was won easily by the McCormick Binder at the field trial at Coulommiers, on July 19th, against all comers. This is the greatest and most important trial held in France during the Exposition year.

THE "DANDY" WINDMILL FEELS PERFECTLY "AT HOME" IN EVERY COUNTRY OF THE WORLD.

The self-regulating windmill is a native of the United States, and for many years was only used in this country, but of late has been gradually introduced abroad, and is now extensively used in several foreign countries and is rapidly becoming known and appreciated everywhere. It is admired for its cheapness and durability.


"Dandy" Windmill, Made by the Challenge Windmill and Feed Mill Co., Batavia, Ill., U. S. A.

The "Dandy" galvanized steel mill, manufactured by the Challenge Windmill and Feed Mill Co., Batavia, Illinois, U. S. A., is being shipped into nearly every part of the world—and in large numbers where it has been introduced sufficiently long to prove its superior merits.

The above cut shows a "Dandy" mill and steel tower erected in the Argentine Republic, South America, pumping water from a very deep well and forcing it into a tank elevated fifty feet above the surface.

A "Dandy" mill and steel tower near Birmingham, England, pumping water for a vineyard and vegetable garden There are several hundred "Dandy" mills in successful operation in different parts of Great Britain.

Here is shown a "Dandy" mill and steel tower on one of the many ostrich farms in South Africa. The erection had just been completed when the picture was taken. Hundreds of the "Dandy" mills and towers are in constant and highly satisfactory use on the farms and plantations of South Africa and we might say in every civilized part of the world.

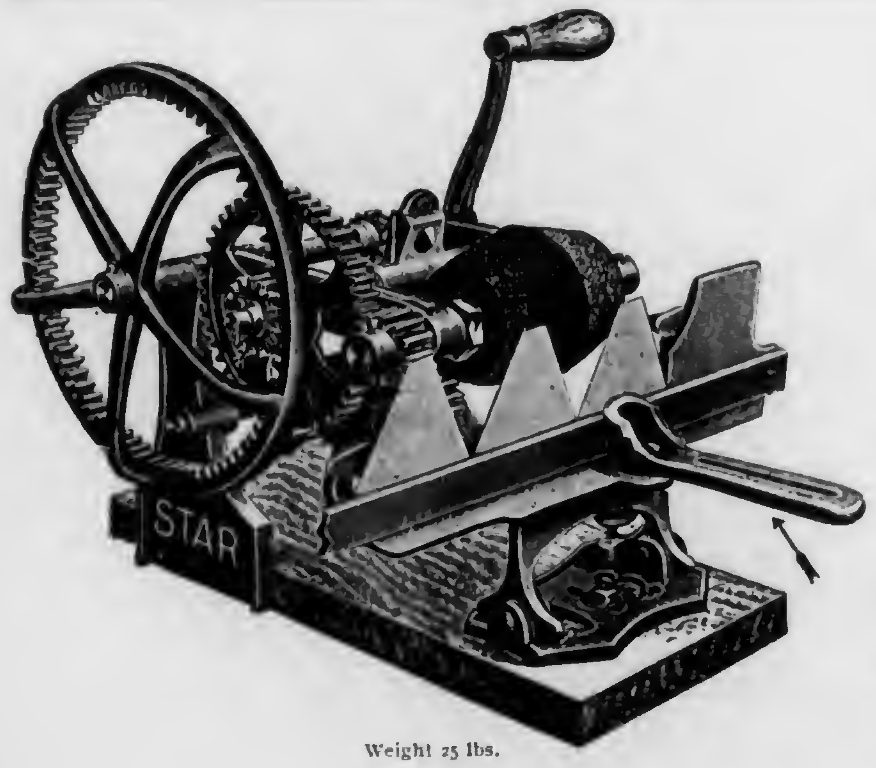
The "Dandy" mill is made of a high grade or cold rolled steel and the very best of cast and wrought iron, the fans and vanes being galvanized after completion. It is constructed on scientific principles, yet simple and easy to erect, not liable to get out of order, runs in a zephyr, and takes care of itself in a gale; in fact, comes the nearest to being absolutely storm proof of any steel mill ever produced. The entire weight of the mill rests on a steel plate 3½ feet below the top of the tower, therefore cannot blow off. The mill and tower are inseparable.

The "Dandy" is the farmer's hope and joy. It will furnish an abundance of water for all purposes.

Their illustrated catalogues gives a full description of all their various styles of wood and steel windmills, feed-mills, corn shellers, stalk cutters, saw tables, gasoline engines, galvanized lawn swings, wood and steel tanks, pumps, pipe, fittings, etc.

"Dandy" Windmill, Made by the Challenge Windmill and Feed Mill Co., Batavia, Ill., U. S. A.

They claim to have the largest and most complete factory of its kind in the world, and to be the most extensive manufacturers of this class of farm machinery in existence. They will be pleased to mail their catalogue to all applicants and to establish agencies in all unassigned territory. Correspondence solicited in any language.



Weight 25 lbs.

CLIZBE BROS.

★★★★ AUTOMATIC ★★★★

"Star" Sickle and Tool Grinder

Or MOWING MACHINE KNIFE GRINDER.

Grinds a perfect bevel on new or old knives, and positively cannot grind out heel, nor grind off the points.

Knives are set so you can see what you are doing. It grinds out the nicks.

It can be taken to the field with mower, works well on the ground, don't have to be fastened to wheel of mower.

Guaranteed to do good work when properly adjusted, and against breakage in transit. Stones are guaranteed for one year.

Our prices are cheaper than you can buy a so-called Sickle-Grinder for.

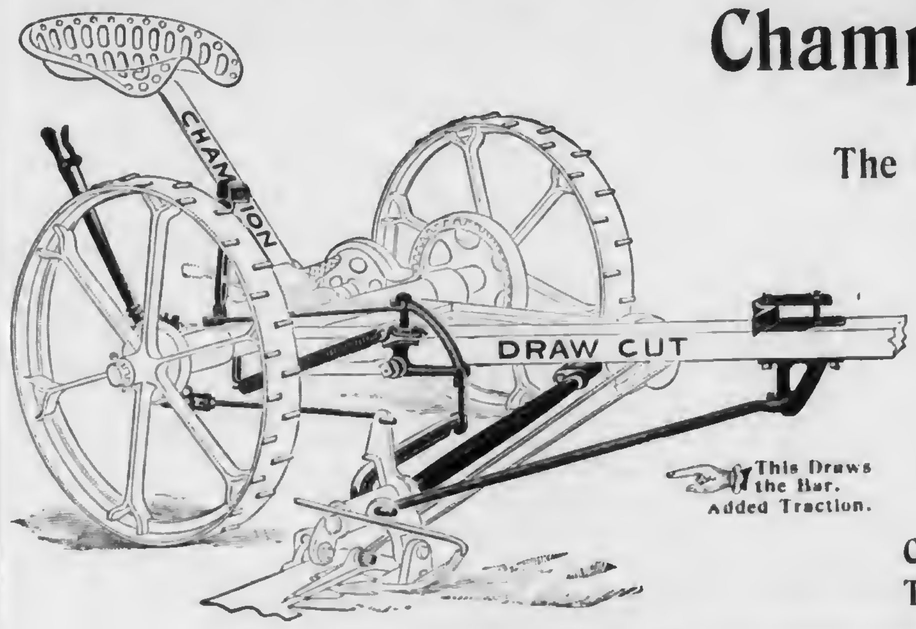
These machines are indorsed by all the leading Harvesting Machine Companies in the United States and Europe.

Write us and we will send you a handsome poster with full size cut of our Star Sickle and Tool Grinder, printed in four colors, and a catalogue and price-list of everything made in Emery Grinders and Emery Wheels.

CLIZBE BROS. MFG. CO. PLYMOUTH, IND., U. S. A.

CHAMPION BINDERS AND MOWERS

Champion Draw Cut. IT DRAWS THE BAR. NO PUSH.



This Draws the Bar. Added Traction.

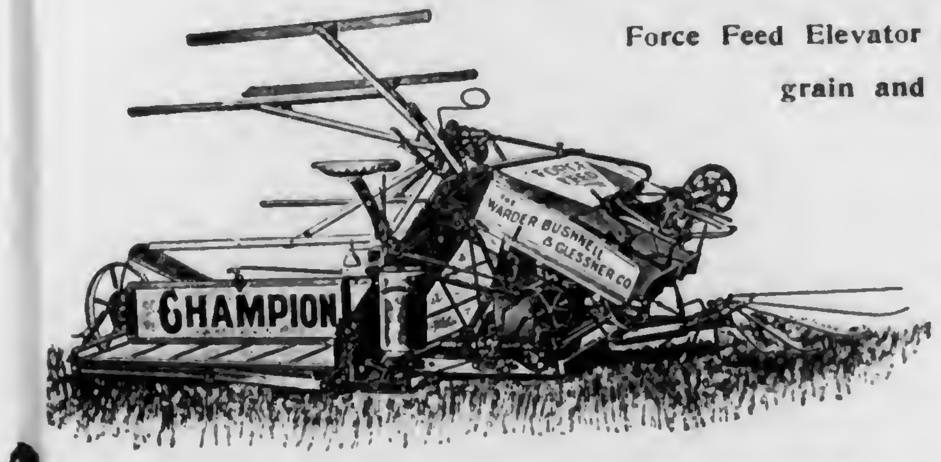
The Wheels will not lift from the ground.

The **Champion** Draw Cut Mower, though a front cut machine, has all the power and traction of a rear cut machine. On the **Champion** Draw Cut Mower the Wheels will not lift when the cutter bar comes in contact with an obstruction. It is the only Mower with an effective and practical device for lining the cutter bar with the pitman. We defy anyone to disprove these statements. Champion machines are especially strong and serviceable, and are designed to cut very close to the ground.

Champion Machines sell readily because they are modern. They work well and give no trouble in harvest time.

CHAMPION FACTORIES at SPRINGFIELD, OHIO, U. S. A.

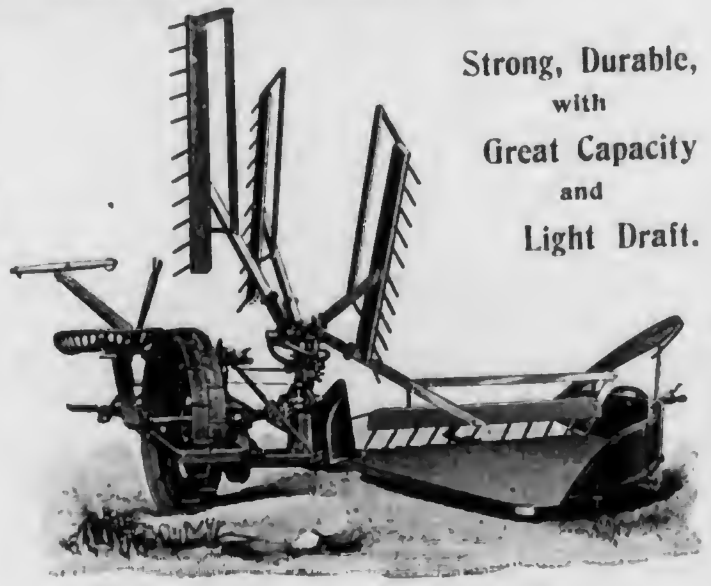
The largest factories in the world devoted exclusively to the making of Binders, Mowers and Reapers.


CHAMPION
THE WARDER BUSHNELL & GLESSNER CO

CHAMPION BINDER, made regularly with closed elevators and left hand cut, but can be furnished with open elevators and right hand cut for districts where oxen are used.

Force Feed Elevator prevents Waste of grain and choking.

Eccentric Binder Wheel gives a gain of 16⅔ per cent. in power when binding.



Champion Folding Bar Reaper.

Strong, Durable, with Great Capacity and Light Draft.

The Warder, Bushnell & Glessner Company,

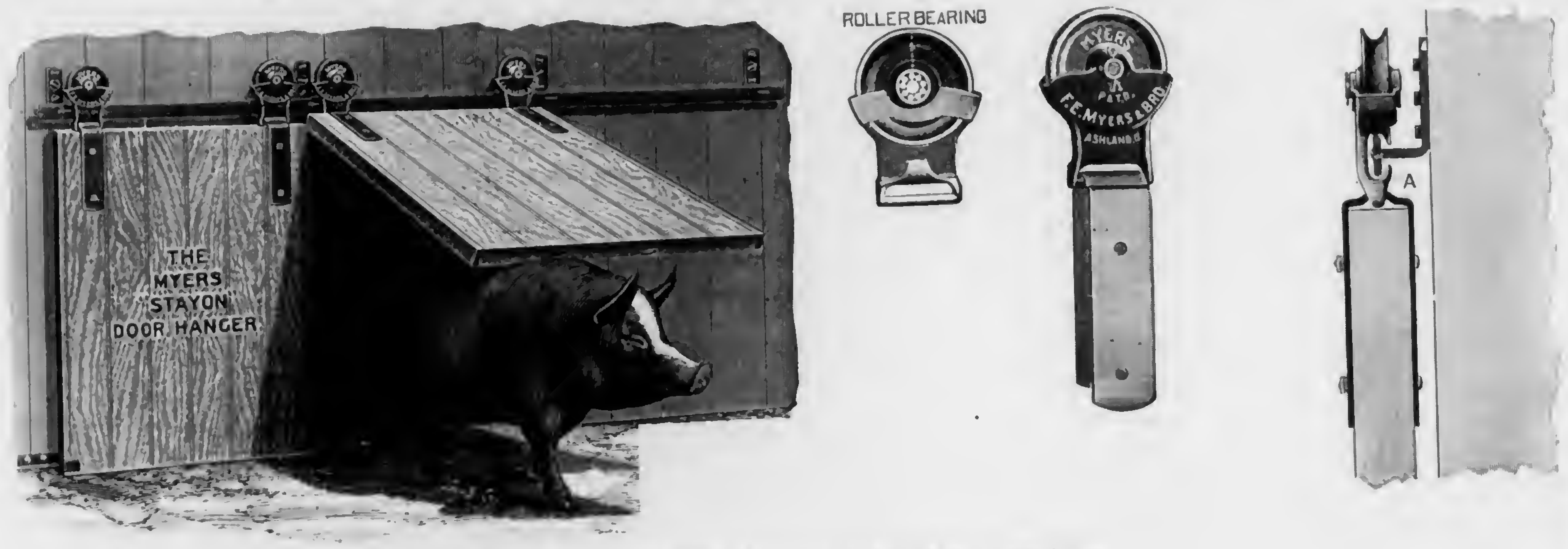
MANUFACTURERS OF CHAMPION BINDERS, MOWERS AND REAPERS,

SPRINGFIELD, OHIO. - U. S. A. - CHICAGO, ILL.

LONDON OFFICE: West India House, 96 Leadenhall St., E. C., England.

THE MYERS FLEXIBLE DOOR HANGER.

The Myers "Stayon" flexible door hanger is so constructed that when once in position it cannot be thrown off the track, no matter how roughly it is handled. The lug (A) locks over the underside of the steel rail, preventing it from being thrown off. This feature alone will recommend it to all users and sell it on sight. The wheels revolve on steel roller bearings (see Fig. 855) and are attached to the door by a steel strap clamped over the top of door, extending down on each side and bolted through. The material is malleable iron and steel. The hanger has a loop joint between the wheel and the top of the door, which allows each door to be raised or shoved outward, independent of the other, a feature not found on any other door hanger. This flexible feature permits hogs, cattle or other stock to pass out under the door and not get fast, as is the case with old-style devices. The door can be held rigidly, by means of the stay roller, when desired. The track is heavy special high carbon stiff steel 3-16 by 1¼ inch, supported by a rigid bracket with square shoulder mortised through the track every 17 inches, thus making a very substantial fastening, and adds materially to the stiffness of the track. It has more than twice the strength of the ordinary track. An important feature of this track is that it can be reversed, that is, can be placed with either side up, which is a great convenience in many places, as it often occurs that the building is not suited to place track as regularly intended.

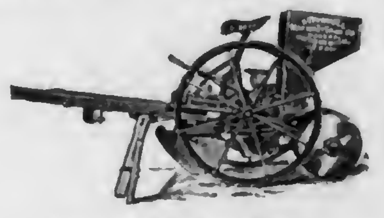

THE MYERS STAYON DOOR HANGER
ROLLER BEARING
MYERS PAT'D. F.E.MYERS & BRO. ASHLAND, O.
A

Myers' Flexible Door Hanger. Made by F. E. Myers & Bro., Ashland, Ohio.

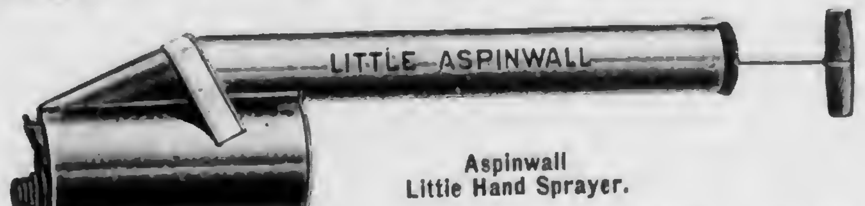
BUSINESS DEPRESSIONS.

There is one thing which dealers and merchants handling American agricultural implements in foreign countries will have to watch after awhile, and that is to know that the implement which they are able to offer their trade for less money than heretofore, is all right. During periods of depression there have been scores and hundreds of firms who never lowered their standards of excellence and thoroughness. They braved the storms, and sent out as good articles the last year as the first. Agents abroad who are not in America to see and know for themselves can always handle good implements that will never come back to discredit them, if they are careful with whom they deal. They are always good, medium and bad from which to select. Generally speaking, cheapness is dangerous. First-class work cannot be sold at the same price as poor work, and there is always different qualities of work on the market. Should history repeat itself, and that condition come which we have been accustomed to call overproduction, then competition would be unloosed, and the strugle for supremacy come. Agents abroad would, above all others, have to see with clear eyes, and should handle goods that will sell on merit and worth. The American implement manufacturer's reputation will then be at stake. It will be in the hands of the agents abroad. They can rely upon it that the makers of the best will put their prices at the lowest figures possible, when the invasion of cheaper goods sets in, but the best will always sell at fair prices.

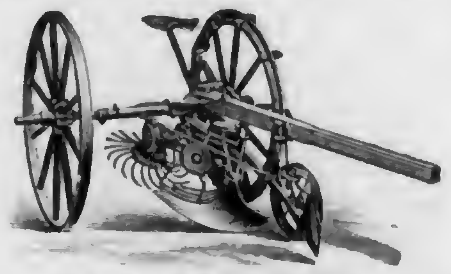
ASPINWALL POTATO MACHINERY



Aspinwall Potato Planter.



Aspinwall Little Hand Sprayer.



Aspinwall Potato Digger.

Reputation established. Over twenty years on the market. Used and endorsed by thousands the world over. We also make Barrel Churns, Lawn Swings, Post Hole Diggers and Weeders. Write for catalogues and prices.

MAQUINARIA "ASPINWALL" PARA PATATAS (PAPAS).

Bien sentada Reputación en el espacio de Veinte Años en el Mercado. Usadas y Recommendadas por millares de parroquianos en todo el mundo. Fabricamos también Mantequilleras de Barril—Columpios de Linóa—Abridoras de Agujeros y Escardillas. Escríbase pidiendo Catálogos y piecios.

APPAREILS ASPINWALL POUR TRAITEMENT DES POMMES DE TERRE.

Réputation établie dans le Commerce depuis plus de vingt ans. En usage et en faveur chez des milliers de clients dans le Monde entier. Nous fabriquons également des Baratles á beurre—Balançoires de Pelouse—Appareils pour planter les Poteaux, et Sarcloirs à mauvaises herbes. Demauder par leltre les Catalogues et Prix Courants.

"ASPINWALL" KARTOFFELE-GRATE.

Stehen seit über zwanzig Jahren im Handel in bestem Rufe. Sie werden in der ganzen Welt von Tausenden benutzt und empfohlen. Wir fabriziren auch Butterfässer, Schaukeln, Pfostensetzer und Jäter. Kataloge und Preisliste gratis und franco.

Aspinwall 4-Row Sprayer.

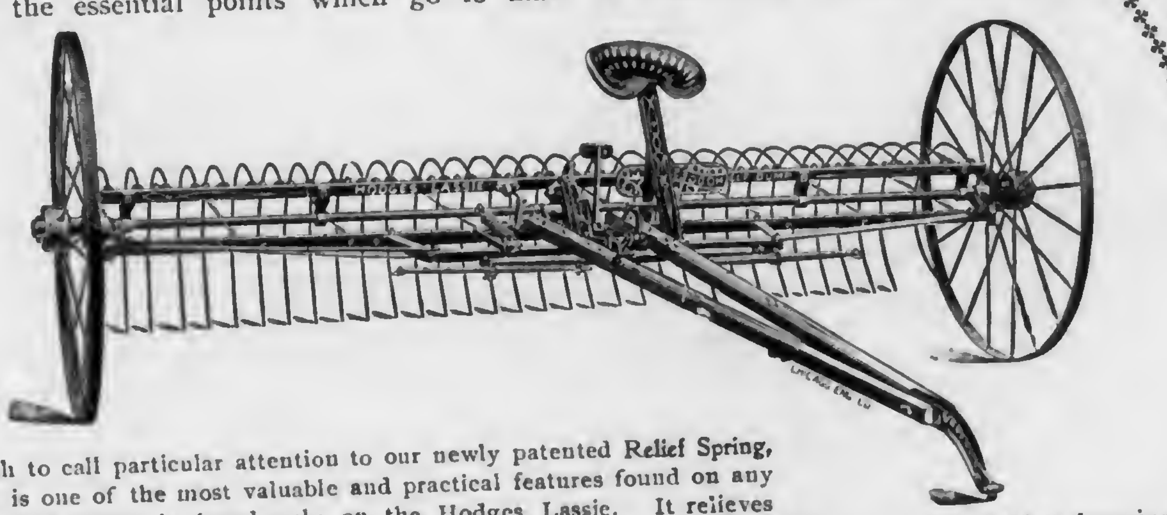
Aspinwall Sorter.

DEPT. B.

ASPINWALL MANUFACTURING CO., Jackson, Mich., U.S.A.

ACME

"The highest attainable point of excellence" will be found in the **HODGES LASSIE SELF DUMP RAKE**, which is a combination of all the essential points which go to make a Perfect Hay Rake.

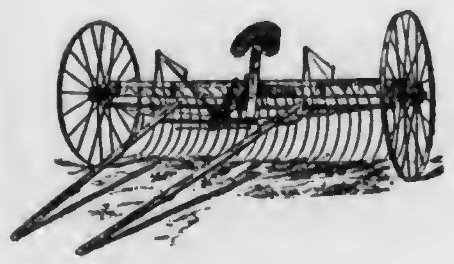


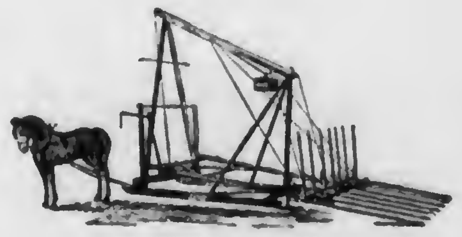
We wish to call particular attention to our newly patented **Relief Spring**, which is one of the most valuable and practical features found on any rake, and which is found only on the Hodges Lassie. It relieves the operator of all effort, does away with all jerks and jars when head returns to place after dumping. The more you know about these rakes, the better you will like them. A trial will convince you that they are the best ever produced by any one anywhere. Our 40th Annual Catalogue gives full description of construction and illustrations of these rakes, and **Hodges Steel Chain Drive Header, Hodges Hercules Mower, Hodges Laddie Hand Dump Steel Rake, Acme Stacker, Monarch 3-Wheel Sweep Rake, Acme 2-Wheel Sweep Rake, Hodges Baling Presses.** Branch houses and distributing agencies everywhere.

ACME HARVESTER CO.

PEKIN, ILLINOIS,

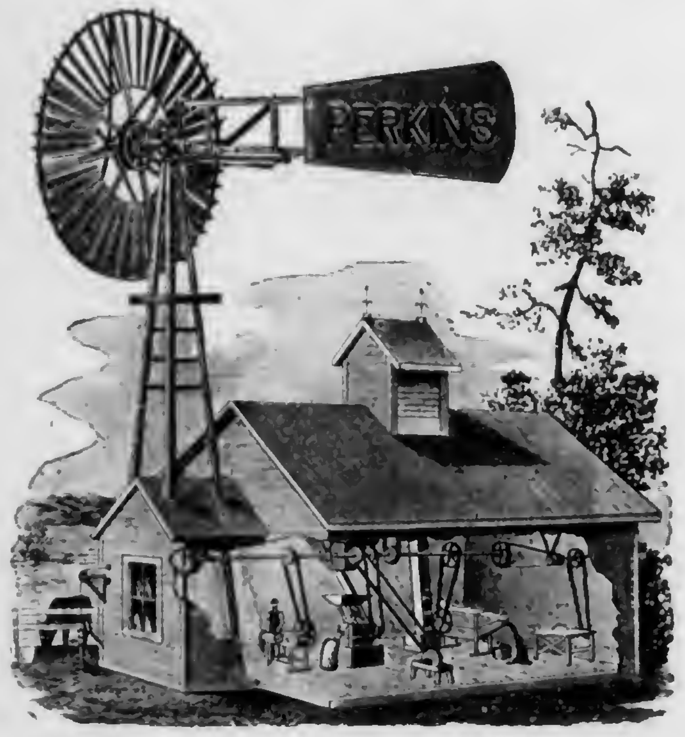
U. S. A.





POWER MILLS IN THE FOREION TRADE.

Perkins Windmill Co., Mishawaka, Indiana, U. S. A., is one of the leading companies in the United States manufacturing windmills, tanks, towers, etc. In the United States their goods are in demand everywhere, which keeps their factory busy at all seasons.


Perkins Windmill, made by the Perkins Windmill Co., Mishawaka, Indiana, U. S. A.

While for the past twenty years the Perkins foreign trade has been growing enormously in pumping mills, and that particular branch has become an important factor with the Perkins Windmill Co., the power windmill has been given but little attention in this line. An occasional order for a power mill during the past five years has awakened a trade wherever these mills have been put up, until the company has been called upon the last season to give this branch of business particular attention. Their power windmill has been so long before the people of America, and is so well and durably made for all climates, that the increased output has hardly met the demand.

The illustration shows a 14-foot power windmill pumping, grinding and cutting feed, a stone for sharpening tools, and a saw for sawing wood. Thousands of farmers are now using these mills successfully, and claim that they can do the work in a satisfactory manner, and at a lower price, than from the cheapest manual labor. All that is necessary is to keep the hopper full of grain and the grinding mill will grind, night and day, all kinds of grain for stock or food.

The Perkins Windmill Co. are still making, at their factory at Mishawaka, Indiana, U. S. A., a full line of their well-known steel and wood windmills for pumping water. They invite correspondence from all interested and from every portion of the world. They have excellent facilities for packing and shipping their goods.

OPPORTUNITIES FOR WORKERS.

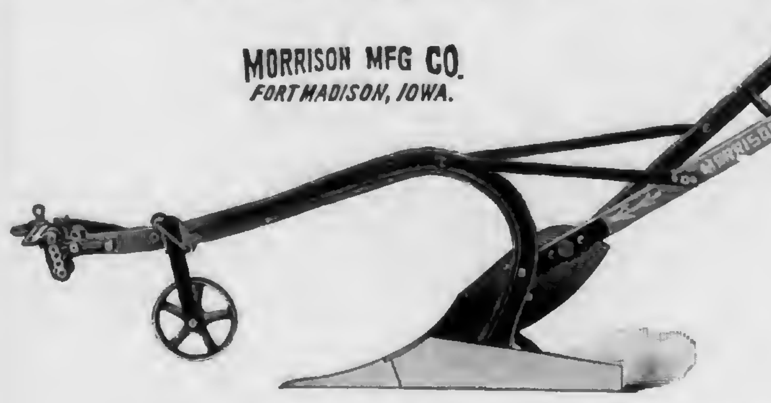
The "Export Implement Age" reminds those among its readers in foreign lands who have commercial aspirations that the manufacturers of all manner of implements, tools, machinery and equipment in the United States are seeking for gentlemen of ability, energy and practical knowledge of their country's requirements to directly represent them abroad. Americans are disinclined to do this.

There is a grand business opportunity to represent American houses abroad, and gentlemen of character can occupy these places. It is suggested to our consuls to further this matter among the business communities to which they are accredited. More efficient help is to be had in this way than in the most energetic American solicitation. This method has been remarkably well developed in Mexico, even where it is comparatively easy for Americans themselves to transact business. The Australian field is already well organized, but it is an English-speaking country. There are abundant opportunities in all parts of the world to make business.

We are entering not only upon a new century but a new era, and the world is invited to participate in the grand triumphal march of progress from lower to higher conditions.

American implement manufacturers, jobbers and exporters ask the commercial coöperation of the progressive merchants and aspirants for commercial life abroad to aid in introducing and increasing the sale and use of those products which will make the cultivation of the soil a pleasure rather than a toil, and a source of adequate compensation rather than a means of mere subsistence.

THE HEIGHT OF PLOW PERFECTION IS REACHED IN THE **MORRISON PLOW,**


MORRISON MFG CO.
FORT MADISON, IOWA.
MORRISON

which has been made for nearly fifty years on the same spot. Many awards, diplomas and medals at county, state, national and international expositions attest its merits.

We are always glad to answer THROUGH OUR EXPORT DEPARTMENT any questions which are asked relative to our machinery.

MORRISON MFG CO.
FORT MADISON, IOWA.
MORRISON MF'G CO. FORT MADISON, IA.

Printed Catalogues and Circulars free; postage paid.
We solicit correspondence.

MORRISON MFG. CO., FORT MADISON, IOWA, U. S. A.

LIGHT RUNNING

PLANO

BINDERS
MOWERS
REAPERS
HEADERS
HAY RAKES
SICKLE GRINDERS

The Most Simplified and Perfect Line of Harvesting Machines in the World

Carried Away The Honors of '99

Thousands of live dealers doubled and trebled their trade with it during the season of '98 and '99, and it will double yours in 1900

MADE BY THE PLANO MFG CO. CHICAGO U.S.A.

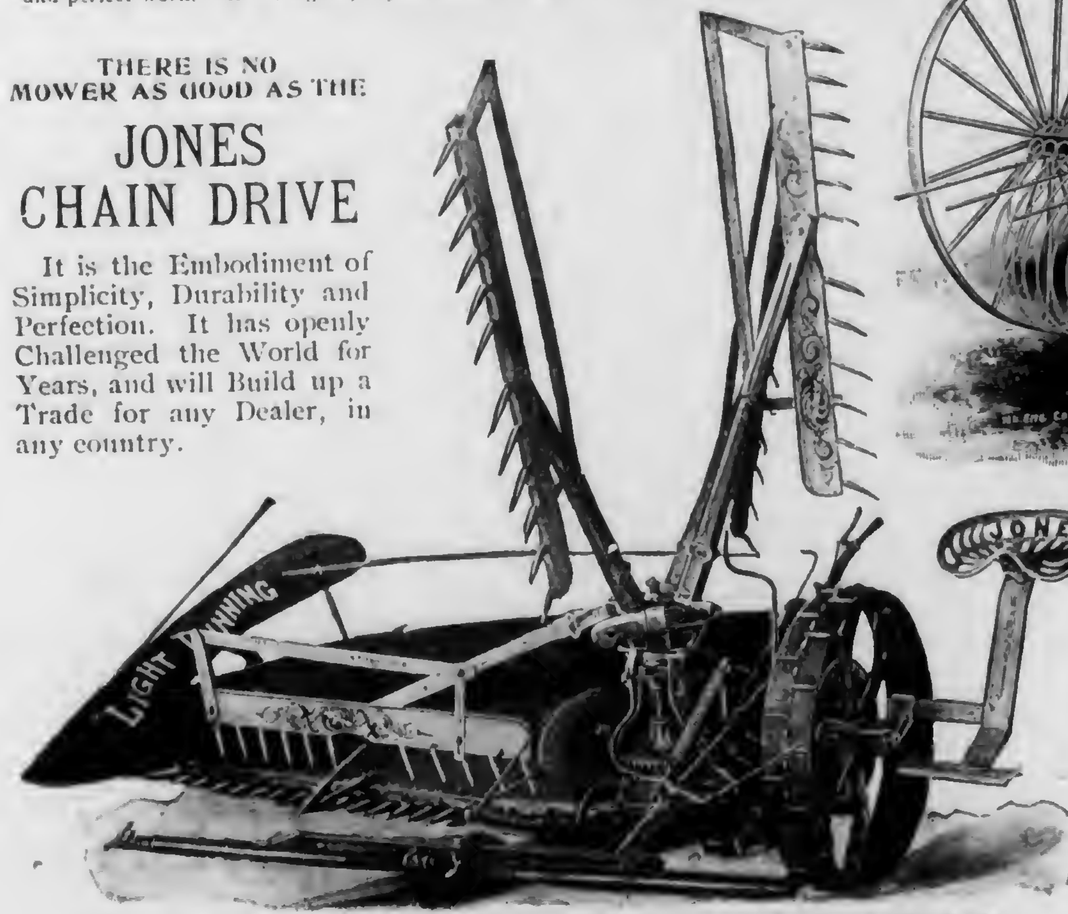
"In a contest with twelve other mowers on the largest ranch in the United States, covering an area of 260,000 acres, the Jones Chain Mower won first place for light draft and perfect work."—*E. M. Pogson, Te Jon Rancho's, Cal.*

THE JONES LEVER BINDER is the Acknowledged Triumph of the Age.

THERE IS NO MOWER AS GOOD AS THE

JONES CHAIN DRIVE

It is the Embodiment of Simplicity, Durability and Perfection. It has openly Challenged the World for Years, and will Build up a Trade for any Dealer, in any country.



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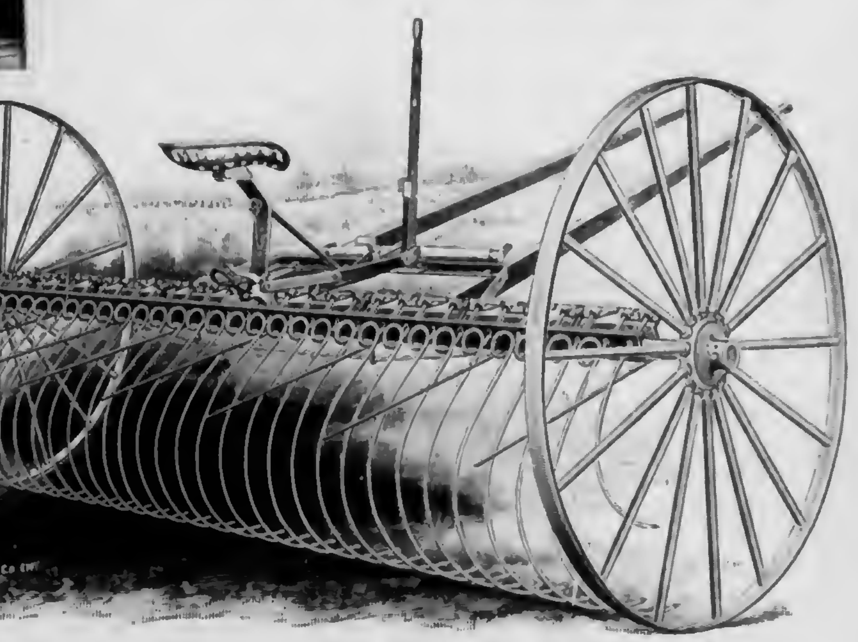
The Jones Adjustable Hay Rake has no equal as a Seller and a Worker. The only Adjustable Hay Rake made.

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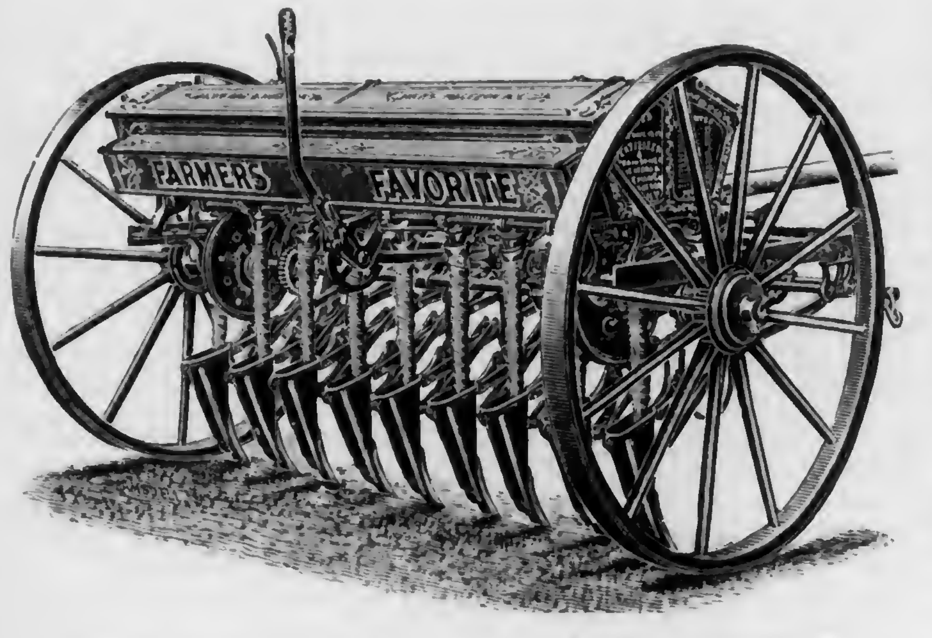
The **Plano** MANUFACTURING COMPANY
CHICAGO, ILL., U. S. A.
115 Southwark Street, - LONDON, S. E., ENGLAND.

THE FARMERS' FAVORITE GRAIN DRILL.

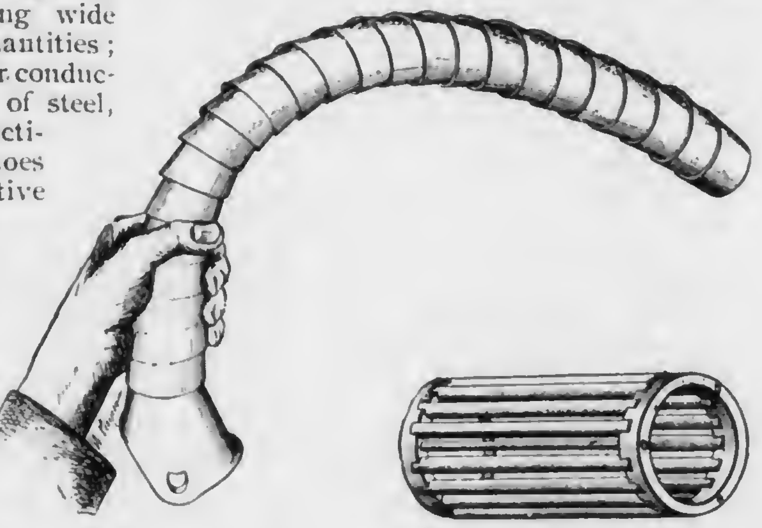
The manufacture of the "Farmers' Favorite" grain drill was begun more than half a century ago, the implement to-day embodying all the knowledge and experience of its makers, whose attention has been devoted exclusively to it since 1842. Its excellence at home has long been acknowledged, and during the last decade, wherever introduced abroad, it has taken a front rank place, and holds to-day a leading position in export trade. For sowing grain and seed of all kinds it is unsurpassed. For distributing fertilizers its "Wizard" force feed, controlled exclusively by the manufacturers, Bickford & Huffman Co., Macedon, New York, U. S. A., is undoubtedly without equal.



Farmers' Favorite Grain Drill, made by the Bickford & Huffman Co., Macedon, N. Y.

The following are some of the distinguishing features of the "Farmers' Favorite." It is a steel drill, not only the frame, but every possible part, even the grain tubes being of steel; the frame, wholly of steel, is of great strength and symmetry, so constructed that any part can be readily replaced; wheels with roller bearings; draught claimed to be lightest of all; axles and rock shafts of fine hard steel; center lever with folding device; pressure of greatly increased effectivenes; drag bars short and of great rigidity, easily attached and detached, with tension drag bar clips; force feed double distributors for grain; "Wizard" fertilizer force feed practical and successful in the accurate distribution of all fertilizers; speed device accurate, strong and simple, giving wide range of quantities; grain tubes or conductors entirely of steel, and indestructible; spring hoes simple, effective and durable.

Particular attention is directed by the manufacturers to the roller bearings in the wheels, reducing friction to the minimum; also the steel ribbon grain tubes, which never wear, saving the purchaser the expense of constantly renewing rubber tubes. Both are shown herewith, and an illustration of the drill is also presented.



Besides the regular hoe drill the Bickford & Huffman Co. manufactures a disc drill. The disc attachments and hoe attachments are interchangeable on the same drill frame and body, so that for a small additional cost the farmer can have two drills in one—a hoe drill and a disc drill.

Illustrated catalogues and price-lists may be had on application.

SIBERIAN IMPLEMENT PROSPECTS.

From U. S. Consul reports it is evident that encouragement is being given to the importation of American agricultural implements for the use of that element of population that is seeking homes in Siberia. Our consuls in that part of the world have given much attention to the possibilities of building up an import trade in implements with the United States, and correspondence on that subject shows that a very material increase in the agricultural implement trade with Siberia and Russia proper is now a certainty in 1901. The trade statistics for 1900, so far as received, are satisfactory. The importance of the Siberian field to European handlers of American implements is seen in the fact that 200,000 farmers are arriving in Siberia annually, being provided with free transportation and 37½ acres of land per family. No great immediate results in trade are possible from a people who have to be helped from their old home to their new locations by government aid, but the foundation is being laid for a large and steadily improving trade with these far-off farmers as soon as they can produce enough to allow them means to purchase the best implements for their needs.

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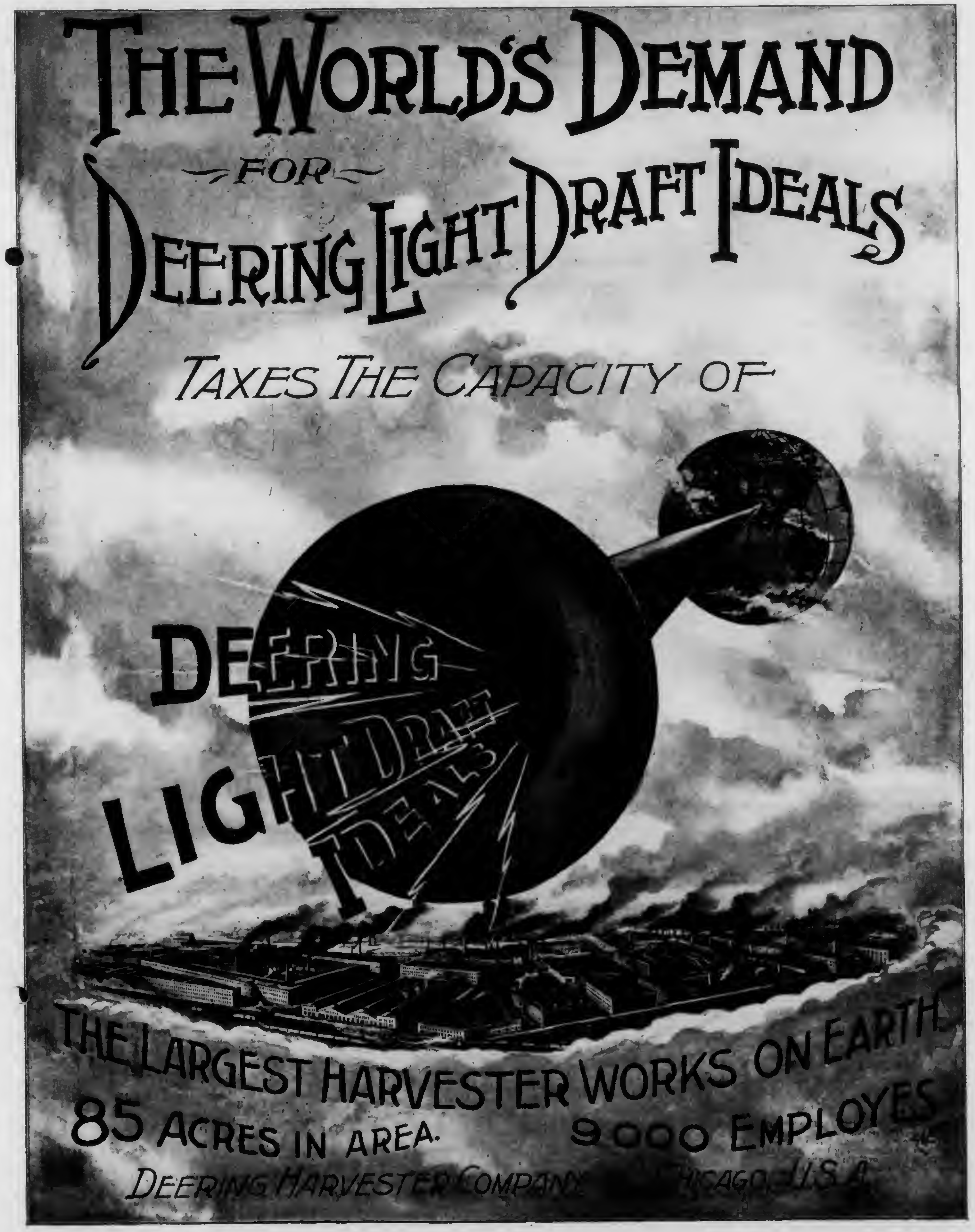

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The names of firms given below, together with the goods mentioned, are arranged for the convenience of buyers. These establishments are among the leading ones in the United States, are strictly reliable, have extensive facilities, and are prompt in transacting business. They fully understand the export trade and carefully look after all foreign orders. The "Export Implement Age" is kept on file in their offices, and any mention of the journal will be an incentive to even greater promptness on their part in obliging you. Inquiries from foreign buyers desiring information relative to American agricultural machinery or implements addressed to them will be given careful and prompt attention. Write in any language you prefer.

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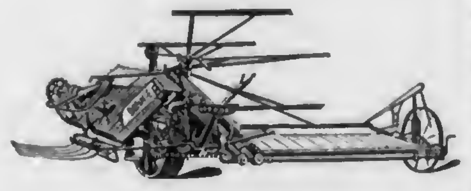

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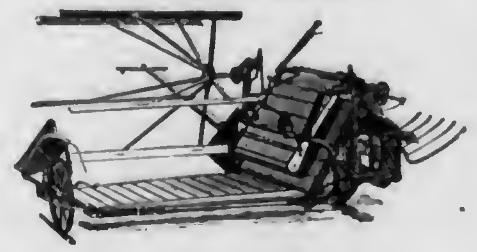

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Whitman Agricultural Co., St. Louis, Mo......... 9

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Vienna, 1873; Philadelphia, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, and the Gold Medal of the Paris Exposition, 1900.

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Las Medallas más valiosas en las Exposiciones Universales de

Viena, 1873; Filadelfia, 1876; París, 1878; Victoria, 1886; Chicago, 1893, y La Medalla de Oro en la Exposición de París de 1900.

♣

Les plus Hautes Médailles de Mérite aux Expositions Universelles de

Vienne, 1873; Philadelphie, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, et la Médaille d'or à l'Exposition de Paris de 1900.

♣

Die höchsten Preis-Medaillen auf den Weltausstellungen von

Wien, 1873; Philadelphia, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, und die goldene Medaille auf der Pariser Weltausstellung von 1900.

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AMERICAN STEEL AND WIRE CO.

Its Exhibit at the Paris Exposition.

In the United States section of the department of mines and metallurgy, the American Steel and Wire Co., Chicago and New York, were located with an elaborate and comprehensive display of their various products. They exhibited a collection of their styles of barb wire, fencing wire, steel and copper wire nails, wire ropes, horseshoes, cutlery blades, wire for hay bales, agricultural implement springs, etc. In addition they show samples of heavy work in rolled beams, channels, etc. This company is one of the largest in the world, and their display at Paris attracted attention from visitors from all quarters.

Exhibit of the American Steel and Wire Co., Chicago and New York, at the Paris Exposition.

PRIZES AT PARIS.

The United States, in all, secured 1,981 awards. Of these 220 were grand prizes, 486 gold medals, 583 silver medals, 422 bronze medals, 270 honorable mentions, and a long list of gold, silver and bronze medals for collaborators. Every line of industry and art and skill is given recognition. American farm products, American mines and forestry receive grand prizes and gold medals, and American cottons, woolens and silks are given the same consideration as are American harvesting machinery, sewing machines, printing presses, liberal arts, and transportation, while silverware, jewelry, art and education are placed in the front. At the Paris Exposition of 1889 only 1,000 prizes, including those for collaborators, were given, divided as follows: Grand prizes, 55; gold medals, 214; silver medals, 300, bronze medals, 246; honorable mentions, 229.

WINDMILLS.

The extent to which the windmill is utilized in America may well be a matter of surprise to farmers beyond the seas. Yet the export statistics for the past year indicate that some progress is being made in introducing this valuable piece of machinery abroad. Our friends in Europe, South America and Australia, who have tested the merits of American windmills, are their strongest advocates, and much of their growing popularity is due to their efforts.

Exhibit of the American Steel and Wire Co., Chicago and New York, at the Paris Exposition.

THREE FIRST PRIZES ON MILWAUKEE MACHINES.

The Milwaukee Harvester Company of Milwaukee, Wis., U. S. A., have exhibited their machines at a few of the leading European agricultural implement shows this season and a number of prizes have been awarded them, among them being a gold medal at the Paris Exposition, a silver medal by the Peterborough Agricultural Society at their show at Peterborough, England, and one of especial significance, a silver medal by the Royal Agricultural Society of England at their annual show held this year at York. The latter medal was awarded after a very severe test in long and green rye, and was the only award made by the Society on harvesting machinery.

ASPINWALL MANUFACTURING CO.

The annual meeting of the stockholders of the Aspinwall Manufacturing Co., of Jackson, Mich., U. S. A., was held at the office of the company, Saturday the 22d inst. Those present were Messrs. C. W. Brega and A. W. Beidler, of Chicago, and L. A. Aspinwall, H. R. Hall and G. G. Rowley, of Jackson. Statements were submitted showing the result of the past year's business and the company to be in a prosperous condition. The improved machinery put on the market by this company the past year has given universal satisfaction, which, taken in connection with the high standard of the Aspinwall potato planter, insures a largely increased business for 1901. The old board of directors were reëlected, who in turn reëlected the old officers for 1901 as follows: Messrs. L. A. Aspinwall, president; C. W. Brega, vice-president, and G. G. Rowley, secretary, manager and treasurer.

GRAND PRIX Highest Award Paris Exposition 1900

NO OTHER FIRM RECEIVED AT THE PARIS EXPOSITION for HARVESTING MACHINES (Class 35) HIGHER OR MORE AWARDS.

FIRST PRIZE in European Field State Trials, 1900.

European Agency of Adriance, Platt & Co., F. MINK, Hamburg, Artushof. Paris, Quai Valmy, 159BIS.

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The foreign dealer will find that American farm machinery will not only bring larger profits to himself but also satisfactory results to his customers, and by selling such goods it will be a matter of economy, honesty, and safety, which is the standard and foundation of permanent business.

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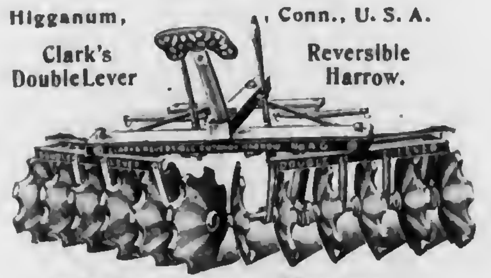
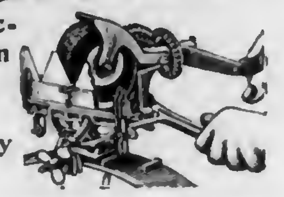
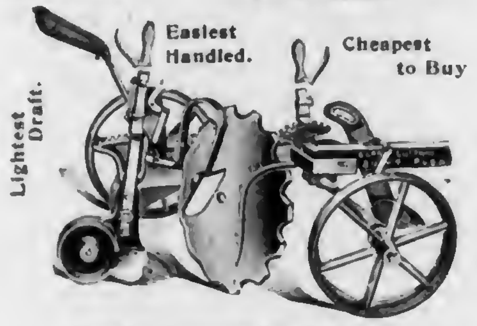


Sole Manufacturers of Dutton Mower Knife Grinder.



Clark's Sulky Disk Plow.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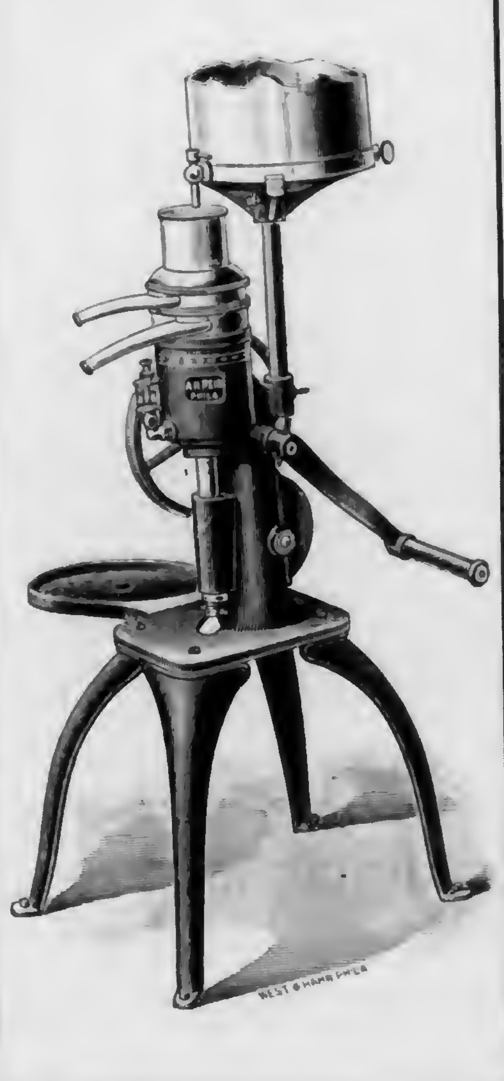

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"The Reid 1900 Separator gained the first week three pounds of butter from the same amount of milk as before. It is the lightest-running machine I have ever seen."
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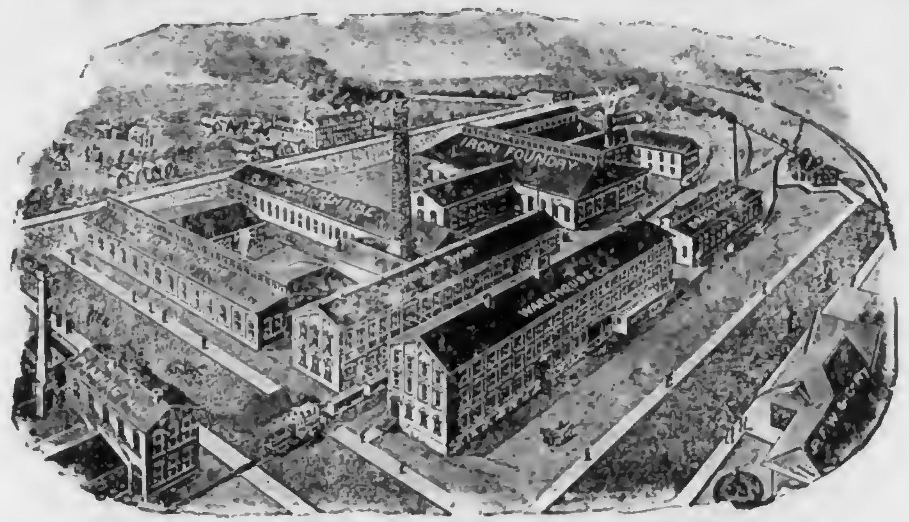

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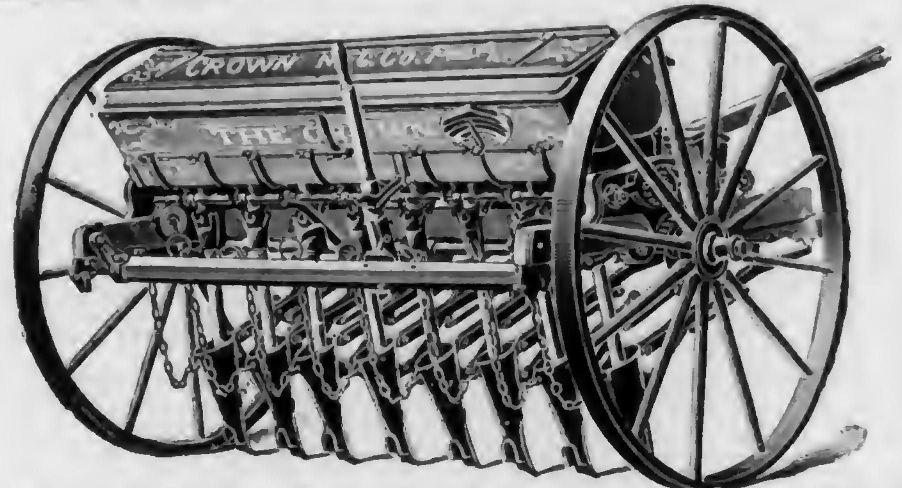

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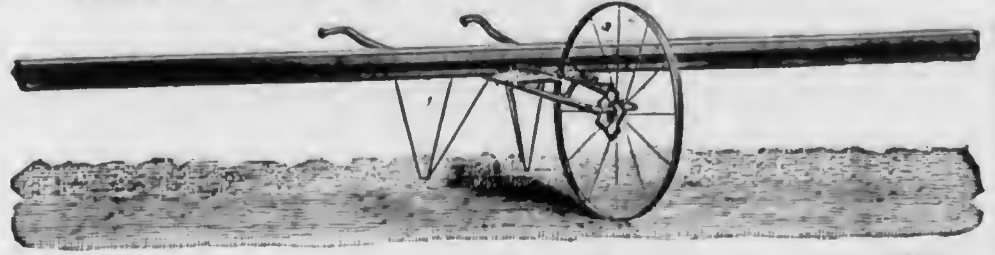

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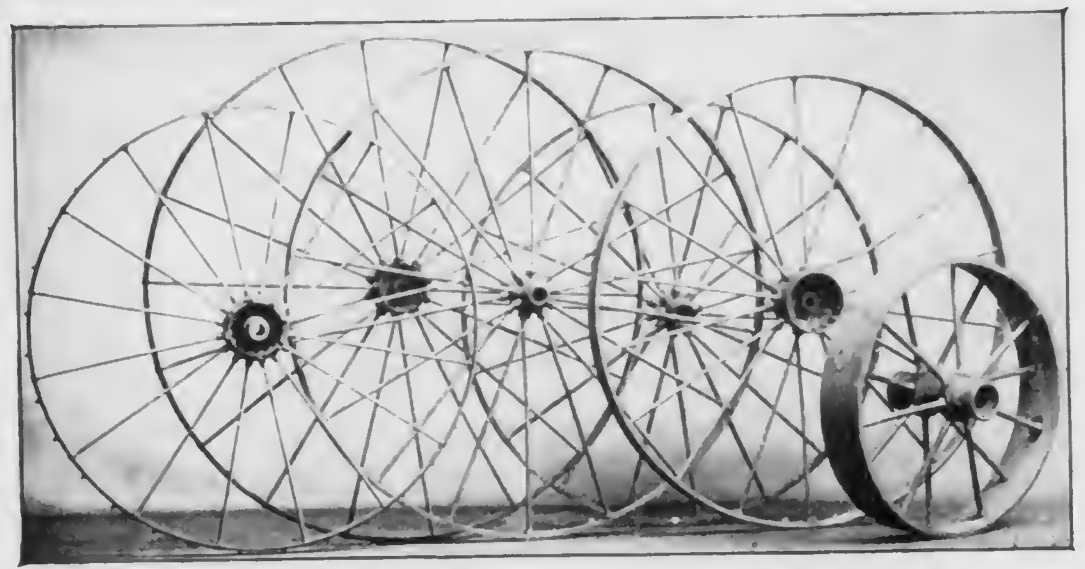
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PHILADELPHIA, PA., U.S.A.

NOVEMBER, 1900.

THE BUCHER & GIBBS PLOW CO., CANTON, OHIO, U. S. A.

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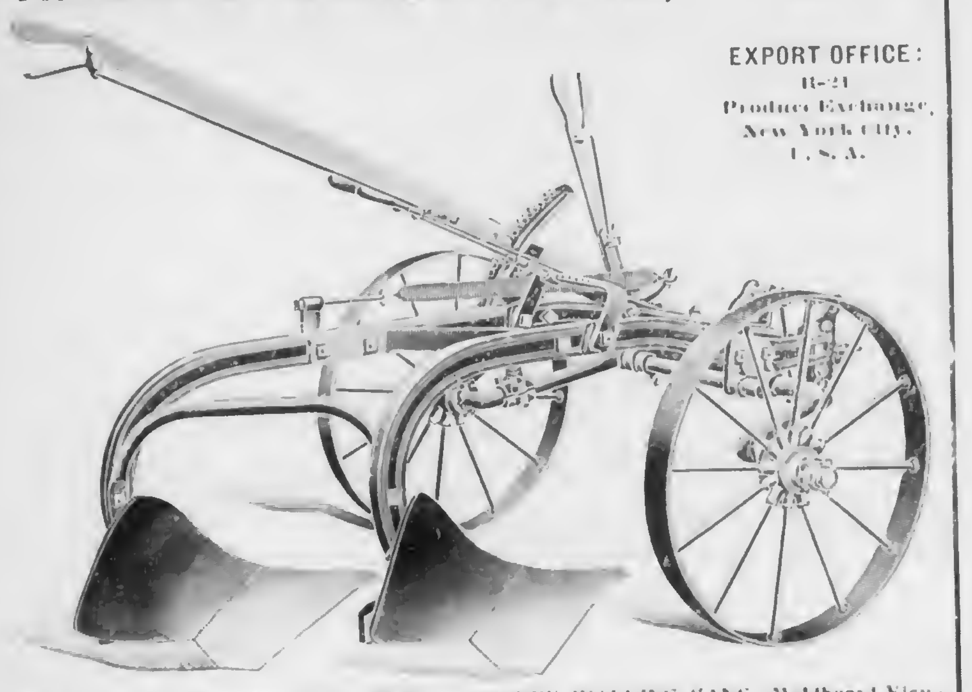
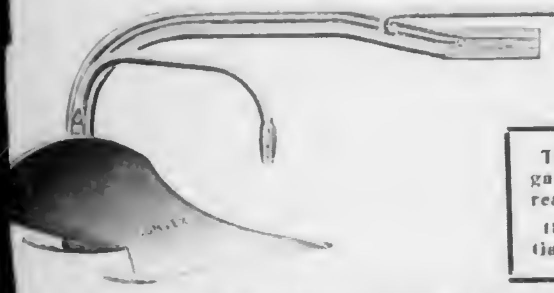


The above cut represents the IMPERIAL CONVEX WALKING GANG, Moldboard View.



This plow bottom can be attached to two-plow gang. Plow can also be furnished with seat and rear wheel.

Our Catalog shows a full line of Hand, Sulky and Gang Plows.

We manufacture a full line of Hand Plows, Gang Plows, Sulky Plows, in all sizes, for all conditions of soil. Also One-Horse Cultivators, Land Rollers, Spike-Tooth, Spring-Tooth and Disc Harrows, Beet Diggers and Cultivators. CATALOG WILL BE MAILED UPON APPLICATION.

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RF
F. E. MYERS AND BRO ASHLAND O. U.S.A

"Superior" Grain and Fertilizer Seed Drills.

✣✣✣✣✣✣✣✣✣✣

Drills with or
without Fertilizer
Attachment.

Disc Drills,
Hoe Drills,
Shoe Drills,
Beet Drills,
Broadcast
Sowers.

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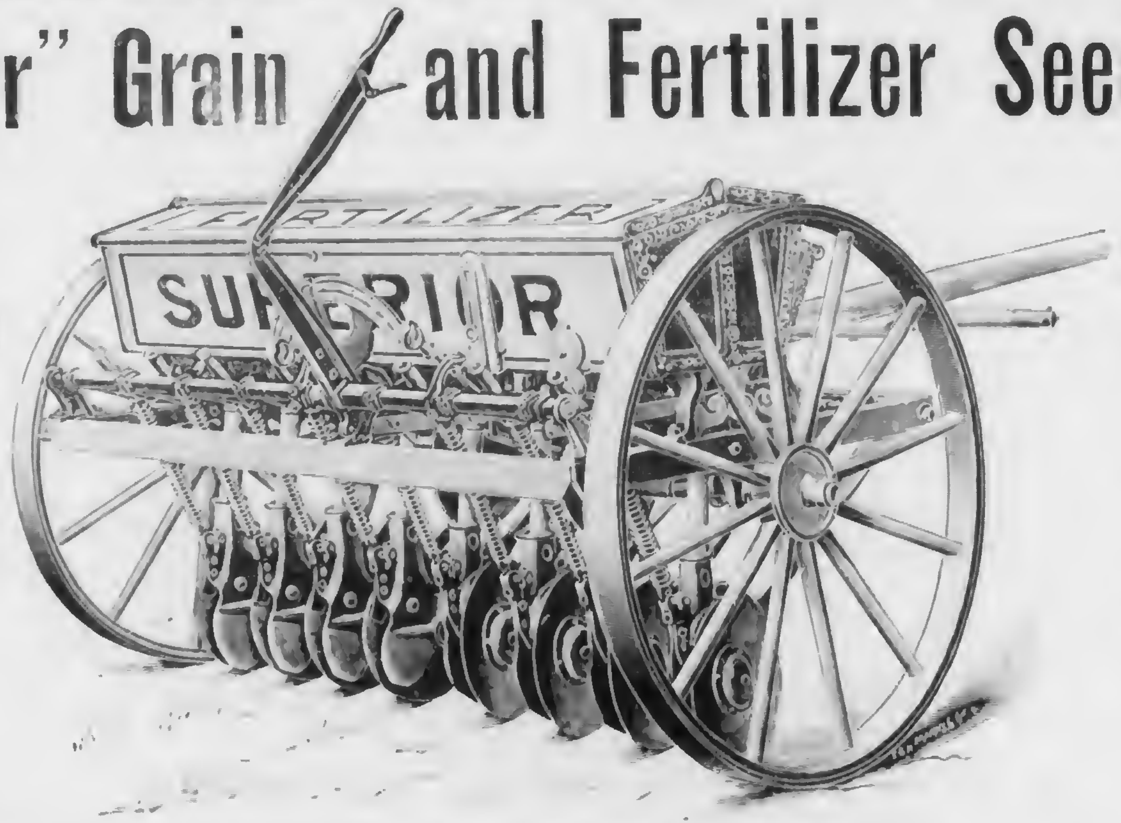
CORRESPONDENCE SOLICITED.



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Complete Line of
Highest Grade
Seeding Machines.

"Superior" Drills
are used with
success in every
wheat growing
section
of the world.

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ILLUSTRATED CATALOGUE ON APPLICATION

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Unsere Hacken- und Scheiben-Drillmaschinen werden in allen Grossen angefertigt.
Nuestras Sembradoras de azada y de disco se tabrican en todos tamaños.

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POTTSTOWN, PA., U. S. A.

Manufacturers and Exporters of
Level Tread
Horse Powers,
ALSO **Threshers and Cleaners.**

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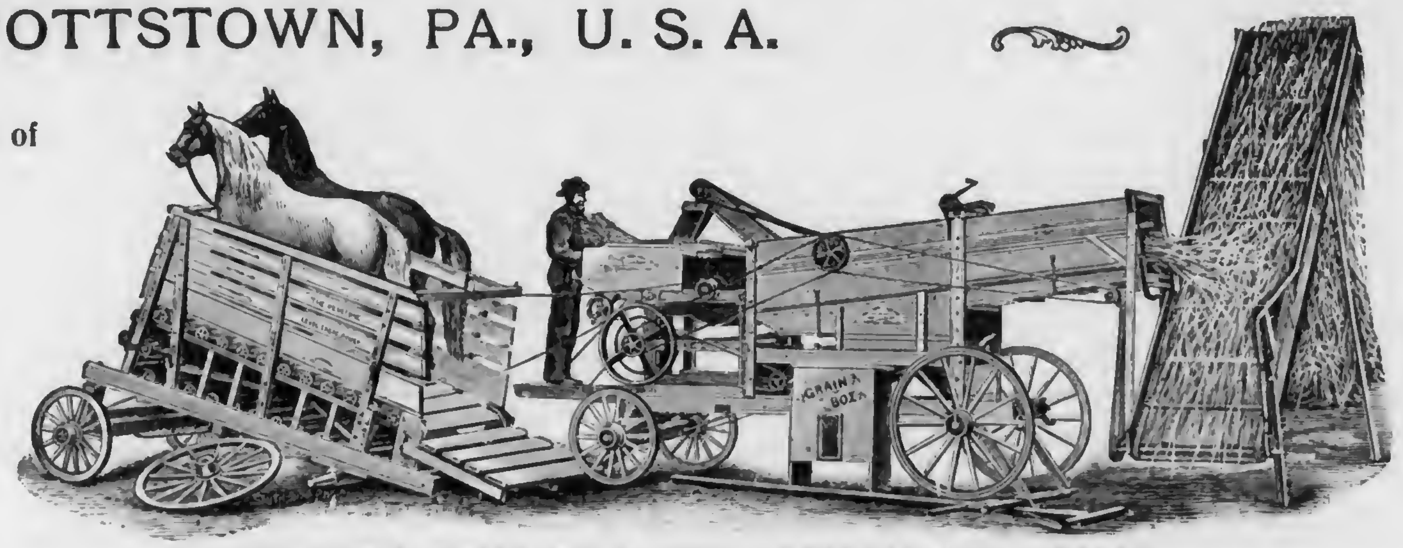
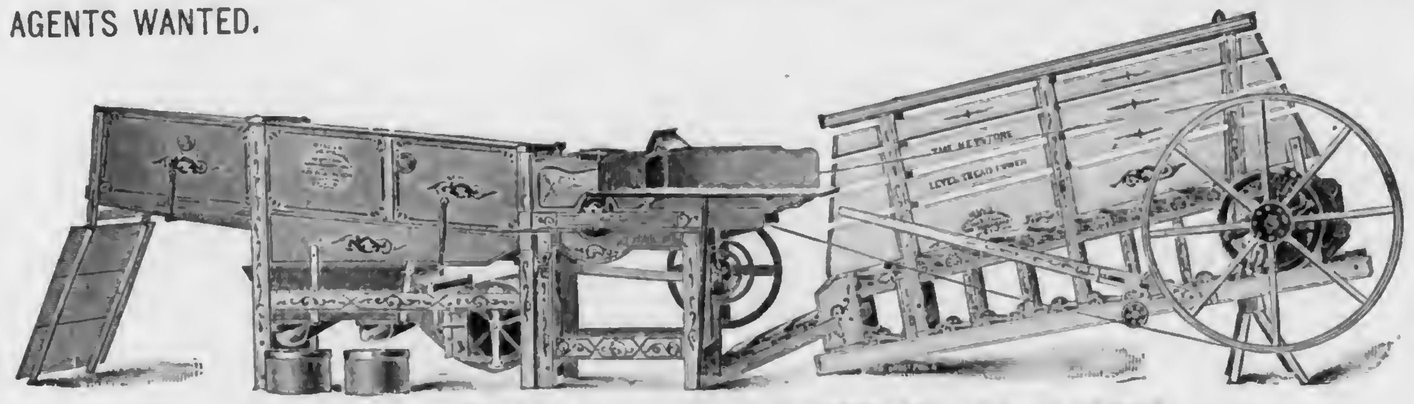
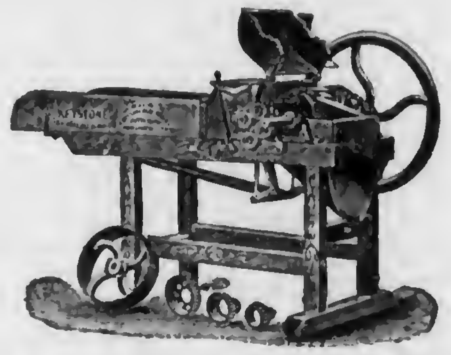
AGENTS WANTED.



TWO HORSE POWER and 28 INCH THRESHER AND CLEANER



ONE HORSE POWER and 20 INCH THRESHER AND CLEANER



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The Keystone Weeder and Shallow Cultivator!!

A Great Labor Saver for the Cultivation
of Sugar Beets, Trucking, etc.

20,000 of the "KEYSTONE ADJUSTABLE" WEEDERS and SHALLOW CULTIVATORS in the STATES in one Season.

Narrowed to 30 Inches.

CAMDEN, DEL., U. S. A., January 16th, 1899.

Keystone Farm Machine Company, York, Pa.

DEAR SIRS:—The Keystone Weeder, that I bought of you in the Spring of 1898, saves me much money. I used in on 10 acres of corn, 16 acres of strawberries, 16 acres of red raspberries, and I am sure it saved me in labor alone last season *one hundred dollars.*

Yours truly,
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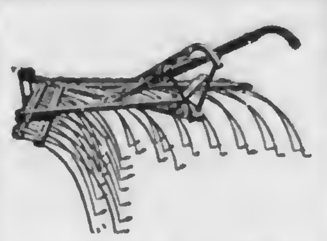
Write to us or to any of our agencies for Booklet containing more than one hundred testimonials from the best dealers. It will advise you of the numerous usages to which this great labor-saving tool is adapted.



Expanded to 7½ Feet.

AGENTS: F. C. Southwell & Co., London.
James S. Duncan, Paris.
G. Duchamp, Brussels.
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EXPORT AGENTS: C. K. Turner & Son,
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KEYSTONE FARM MACHINE CO., Limited,

YORK, PENNA., U. S. A.

The Walter A. Wood
MOWING and REAPING MACHINE CO.

has received the following recognition at the various French International Expositions:

PARIS EXPOSITION of 1867: Grand Prix (Highest Award); Cross of Chevalier of the Legion of Honor.

PARIS EXPOSITION of 1878: Grand Prix, also Special Award of an Object of Art, and Cross of Officer of the Legion of Honor.

PARIS EXPOSITION of 1889: Grand Prix and Special Award of an Object of Art.

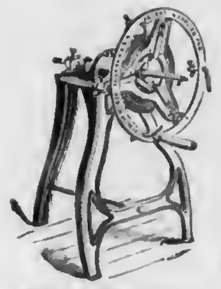
PARIS EXPOSITION of 1900: Grand Prix, with the additional distinction of having its Reaper selected as the type of a modern agricultural implement for the great painting by Albert Maignan, representing Agriculture in the Salle des Fetes. The Wood Reaper was placed at the disposal of the famous artist at his special request, that it might be copied in every detail for this great work, which has been admired by the countless thousands who visited the Exposition.

—Now that the result in 1900 is made plain, perhaps those of our competitors who, while advertising their own success, were over hasty in proclaiming the supposed award of only a Gold Medal to the Walter A. Wood Company, will print a similar statement of their awards at the preceding French International Expositions.

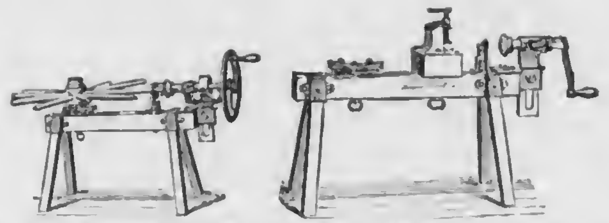
SUCH A COMPARISON IS INVITED BY

The WALTER A. WOOD MOWING and REAPING MACHINE COMPANY

HOOSICK FALLS, N. Y., U. S. A.


Silver's New Taper Hub Boring Machine. Hand power.

Silver's Hub Boxing Machine for light or heavy work.

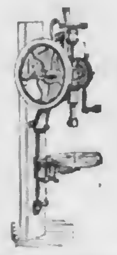

Dole & Deming's Spoke Tenon Machines, hand or power. These machines cut tenons 7-16 to 2 inches diameter and up to 6 inches long.

Silver's No. 1½ Drill, single geared, hand feed.

Silver's No. 1 Hand Drill. Two speeds. Self feed.

Silver's No 2 Hand Drill. Two speeds. Self feed.

No. 12 Advance Drill. Three sizes. Light power or hand. Self feed.


No. 12 Advance Hand Drill. Three sizes. Two speeds Self feed.

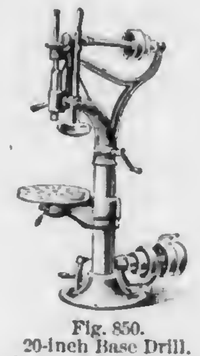
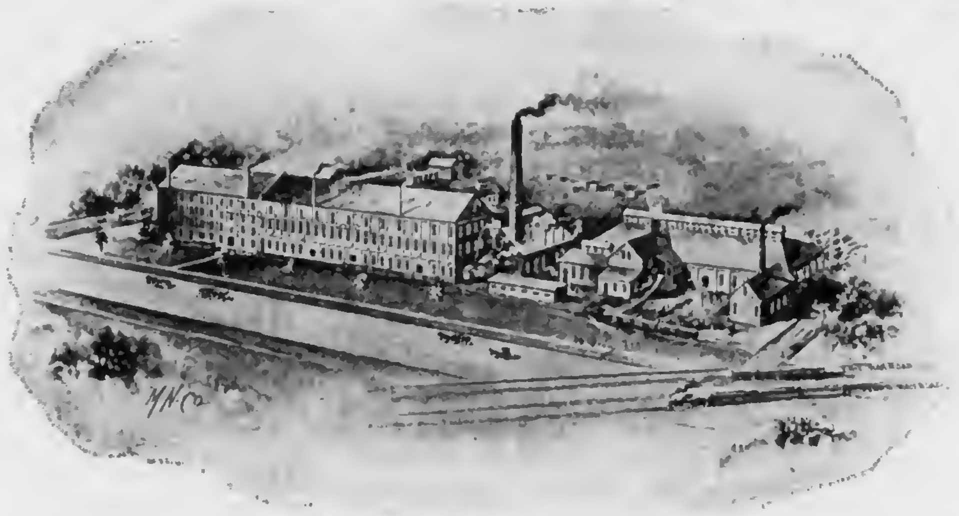
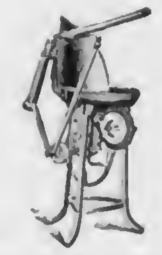


Fig. 850.
20-inch Base Drill. Lever or screw feed. Round or square base.

Catalogues in English and Spanish.


VIEW OF WORKS, ESTABLISHED IN SALEM, OHIO, 1854.

Inquiries and Introductory Orders Solicited.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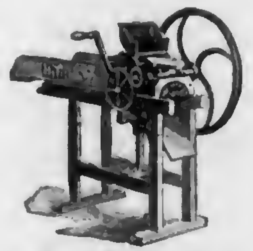


Fig. 779.
Nos. 8½ and 10½, "Ohio" Hand Feed Cutter.

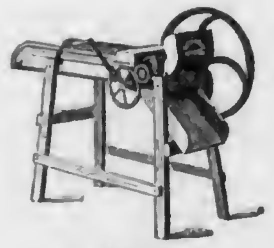


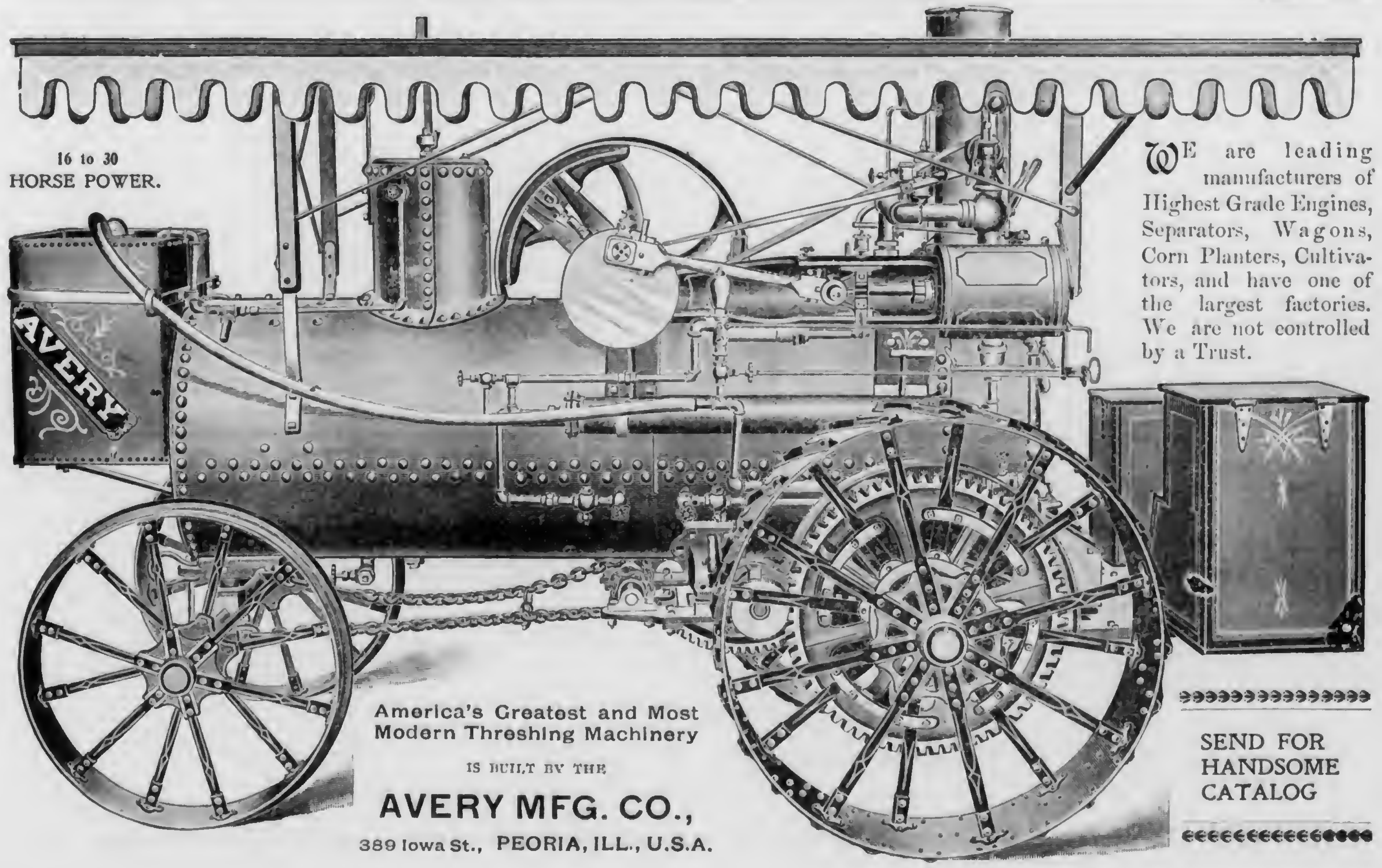
Fig. 783.
No. 11¼, "Pony" Hand Feed Cutter.

THE SILVER MANUFACTURING CO., Salem, Ohio, U.S.A.

New York address: 56 and 58 Pine St. Cable address; "Silver," Salem. Codes; A.B.C. 4th Liebers W.U., and Manufacturers.

Manufacturers of

"OHIO" Feed and Ensilage Cutters, every size from the smallest hand to the largest power machines; Drilling Machines, hand and light power; Portable Forges; Carriage Makers' Tools; Butchers' Tools, etc.



16 to 30 HORSE POWER.

WE are leading manufacturers of Highest Grade Engines, Separators, Wagons, Corn Planters, Cultivators, and have one of the largest factories. We are not controlled by a Trust.

America's Greatest and Most Modern Threshing Machinery IS BUILT BY THE

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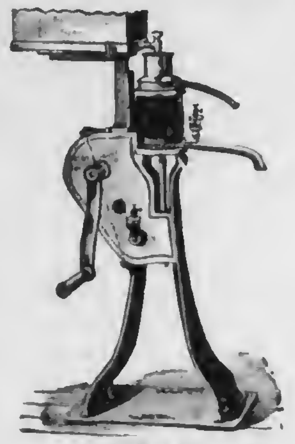

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Is the only make having practically three separators in one, and to which is due its remarkably clean skimming.

The U. S. separates the cream from the milk the Easiest, the Quickest, and the Most Thoroughly of any Separator made, and on account of its simplicity and greater strength, is the easiest to care for and the most durable.

For these and other reasons the U. S. is the most profitable Separator to buy. In a cold climate it will save enough cream that would otherwise go into the skim-milk to pay for itself in a year, and in a warm climate in a much shorter time.

We also manufacture Fruit Driers, Churns, Butter Workers, Animal Powers, etc.

Write for special illustrated catalogues giving full particulars, Frks.

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VERMONT, U. S. A.

Ist der einzige Apparat dieser Art, so zu sagen mit drei Entrahmern in einem Behälter, durch den eine so ausserordentlich vollständige Entrahmung erzielt wird.

Der "U. S." Entrahmer trennt den Rahm von der Milch in einer einfacheren, schnelleren und vollkommeneren Weise, wie irgend eine andere Vorrichtung, und wegen seiner einfachen Konstruktion und soliden Ausführung ist er am leichtesten zu handhaben und hält am längsten vor.

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Aus den obengenannten, und auch aus anderen Gründen, bietet der "U. S." Milch Entrahmer dem Käufer die meisten Vorteile. Durch die Ersparnisse an Rahm, der sonst in der abgerahmten Milch bleiben würde, macht sich derselbe in kalten Gegenden schon in einem Jahre und in warmem Klima n noch viel kürzerer Zeit bezahlt.

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Wir verfertigen auch Obst-Dörröfen, Butterfässer, Apparate zur Butterbereitung, die mit animalischer Kraft betrieben werden, etc.

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VERMONT FARM MACHINE COMPANY,

Bellows Falls, Vermont, U. S. A.

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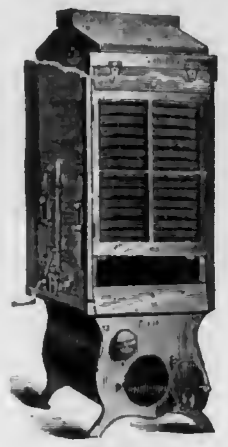

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We make prices F. O. B. New York City.
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COMBINED CHURNS AND BUTTER WORKERS, IDEAL SKIM-MILK WEIGHERS, REFRIGERATING APPARATUS, GANG BUTTER PRINTERS, PARCHMENT PAPERS, BABCOCK TESTERS, PASTEURIZERS, ETC., ETC.

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CABLE ADDRESS: "Creamery," Chicago.

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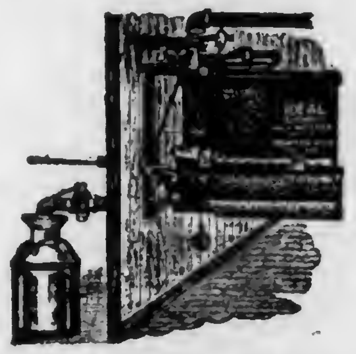
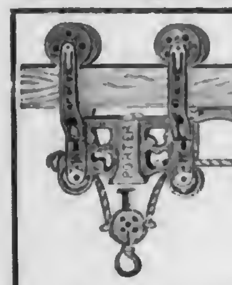


Ideal Skim-milk Weigher.



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The "PIONEER" Manufacturer of

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Makers of the famous line of **Porter Hay Tools**, standard throughout the world. Received first premium at World's Fair, Chicago, and Export Exposition, Philadelphia. We manufacture **150 styles of Iron Pumps**, specially designed for export trade. **Send for descriptive catalogue showing both lines.**

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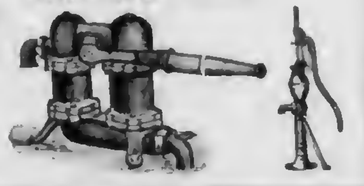

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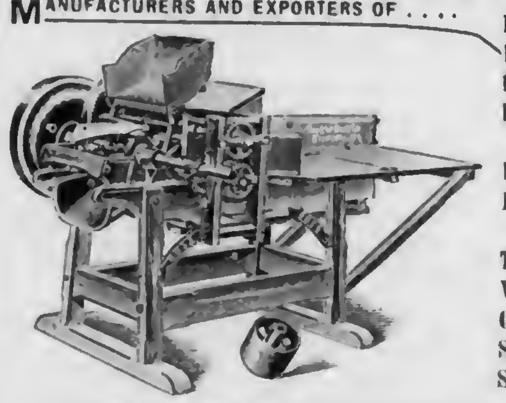

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- **Elevators or Conveyors for all purposes,**
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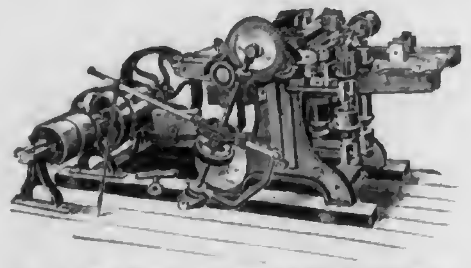

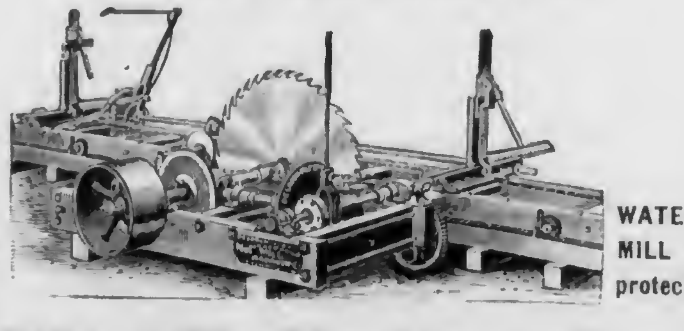

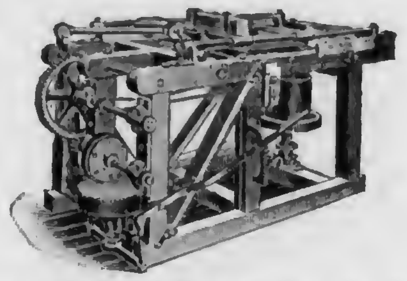

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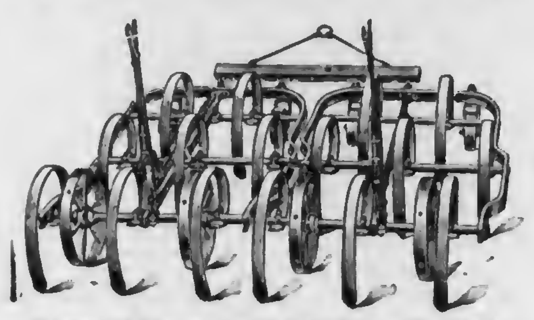
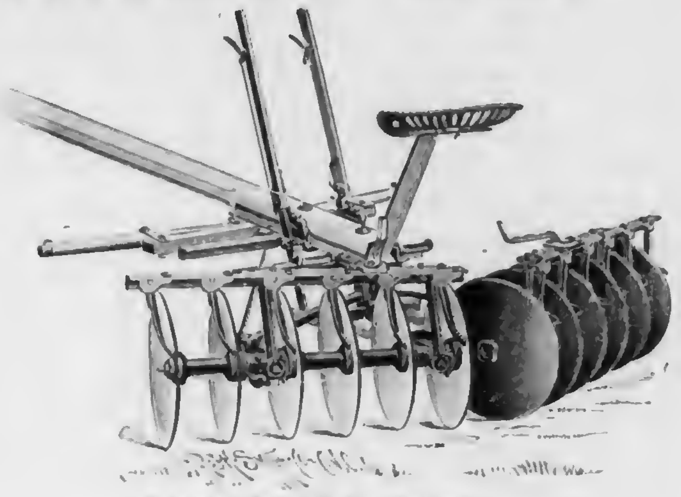
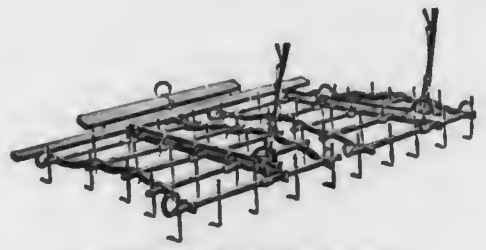


Standard Spring Tooth Harrow, with Wheels.

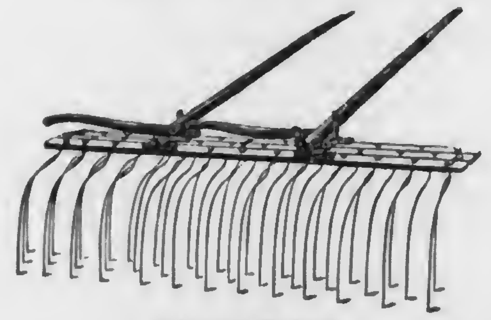


Standard Model B Disc Harrow.

Standard One-Horse Harrow.



Standard Spike Tooth Harrow.



Standard Weeder.

Standard Potato Harvester.

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- Spike Tooth Harrows,
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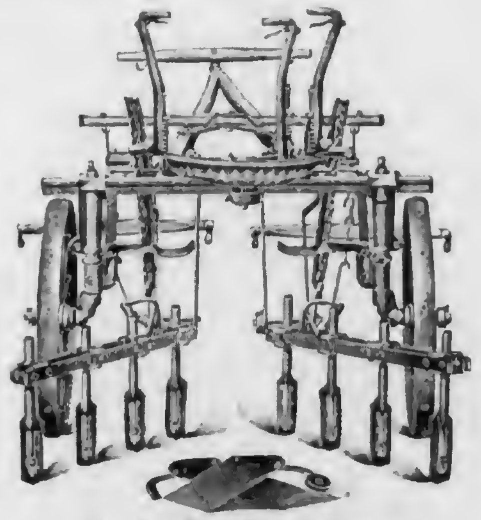
- Corn Shellers,
- Corn Mills,
- Eagle Plows,
- Sidehill Plows,
- Double-Mouldboard Plows.



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Wagon Company
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Heaviest Ironed, Best Timbered, Easiest Running.

Will carry more on the same size axle than any other wagon.

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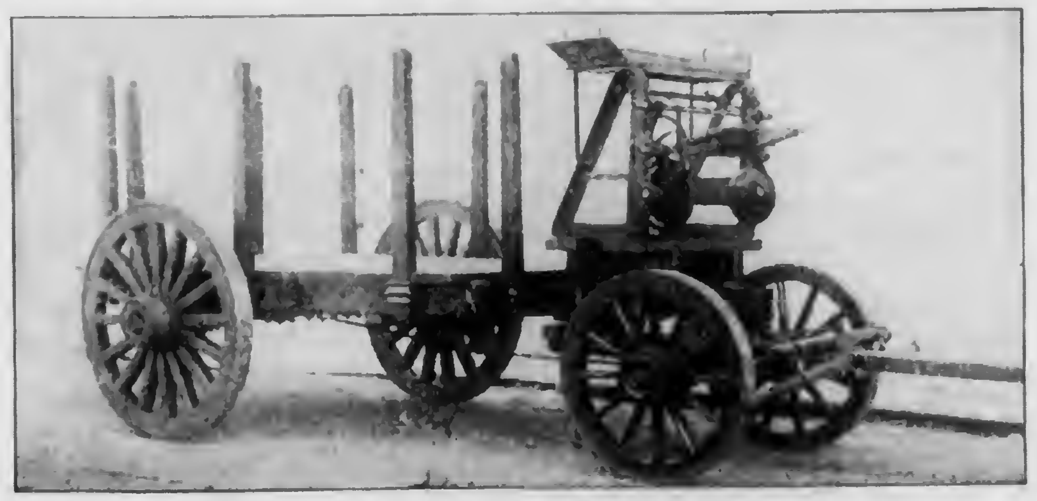

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CAPACITY: FROM 3,000 LBS. TO 20,000 LBS.

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Used in Every Country and in Every Climate.

WILL STAND ANY TEST.

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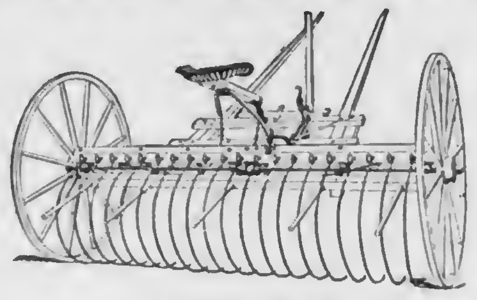

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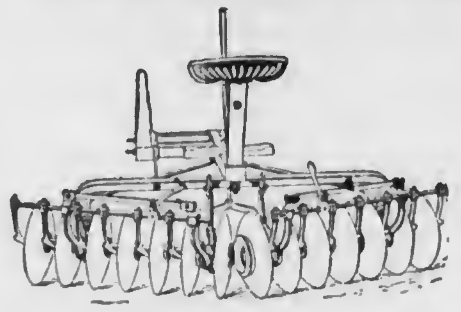
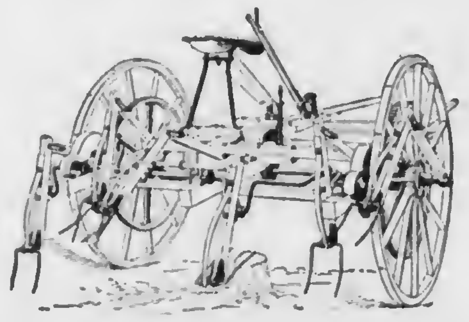


Grain-Seeder
Attachment for Harrows



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HARROWS.

EXPORT OFFICE:
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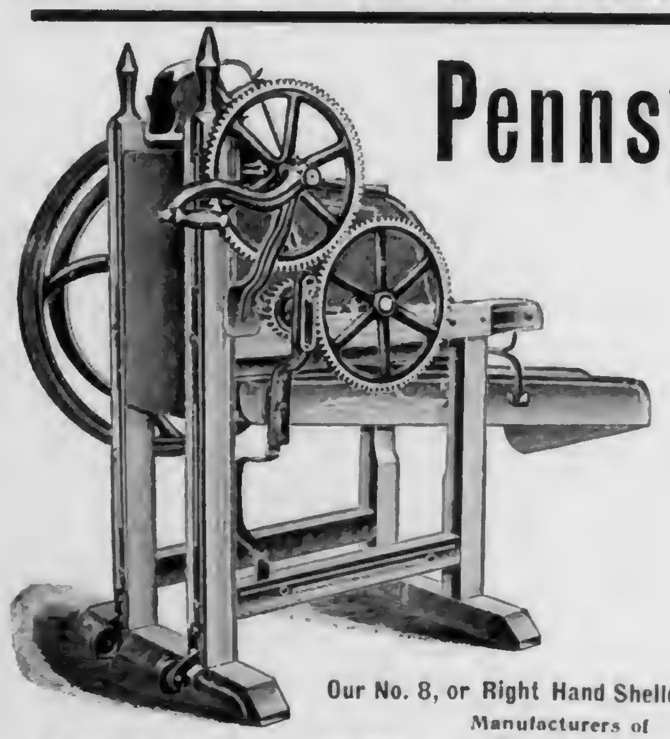
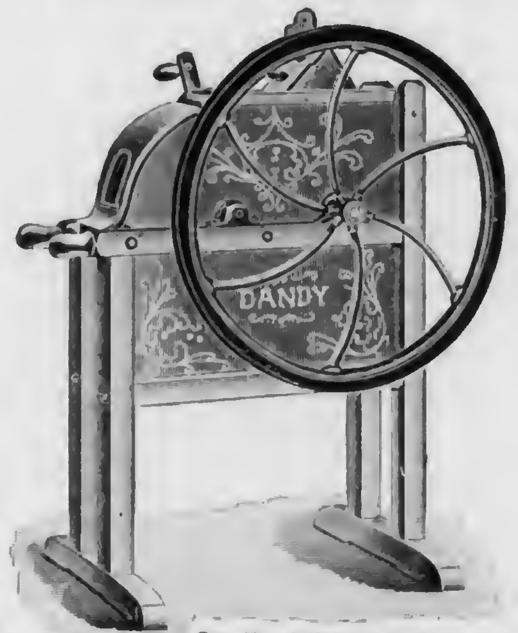


Our No. 8, or Right Hand Sheller.



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CHILLED BUSHINGS.

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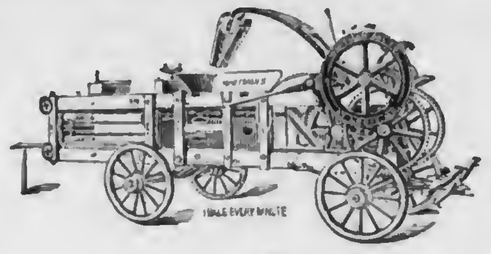

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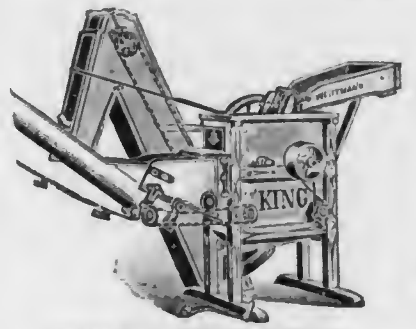
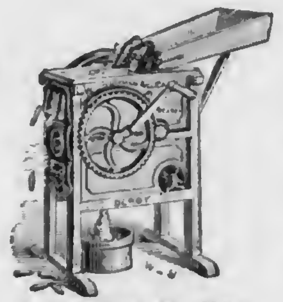
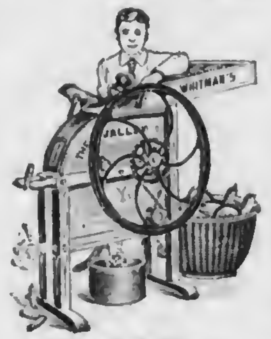


Two-hole Corn Sheller.

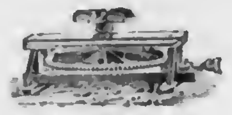


Derby Corn Sheller.

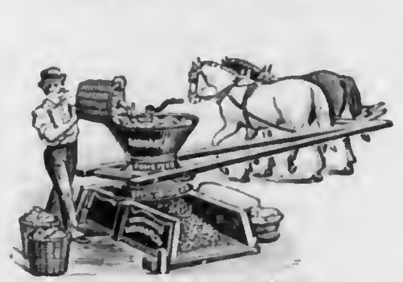


Hand Sheller.

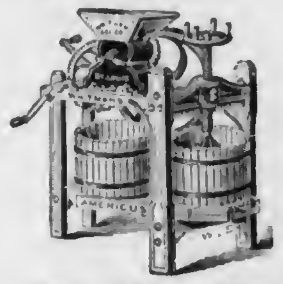
Railway Power.



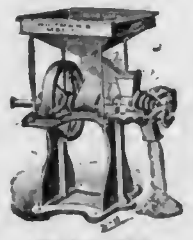
Lever Power.



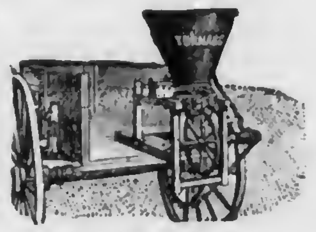
Corn and Cob Mill.



Cider and Wine Mill.



Magic Mill.



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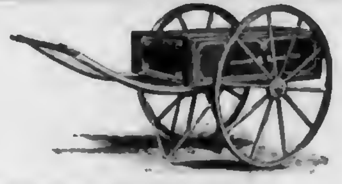

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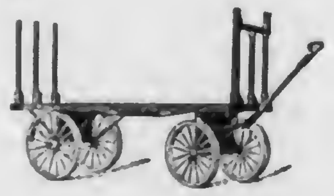

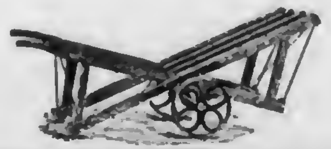

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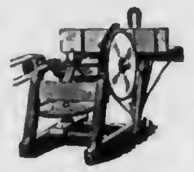
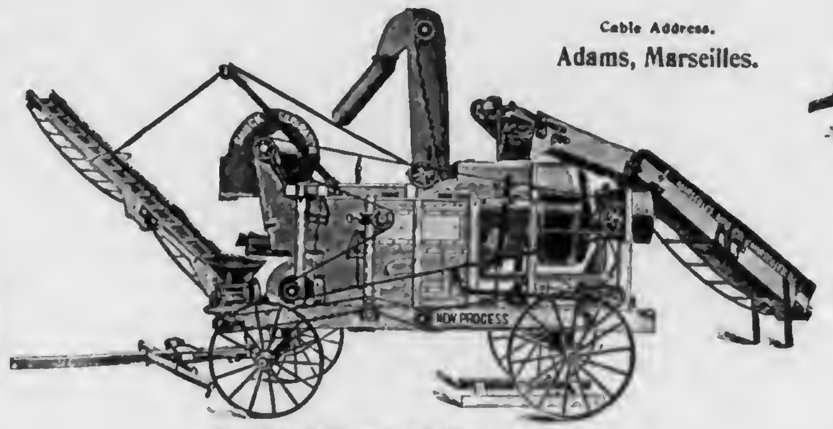

Wood Saws.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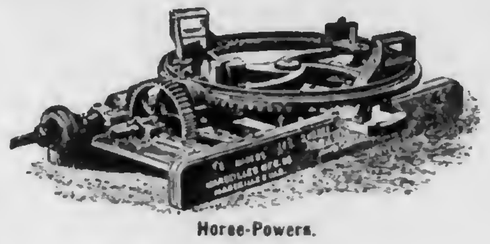
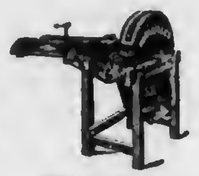
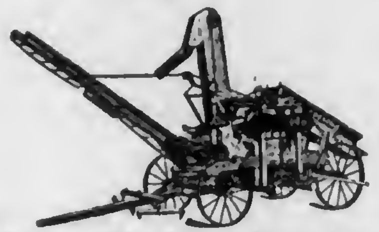

Horse-Powers.

Spreo Jacks.


Feed Cutters.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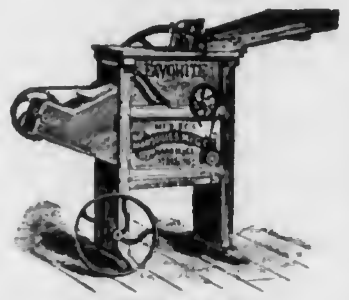
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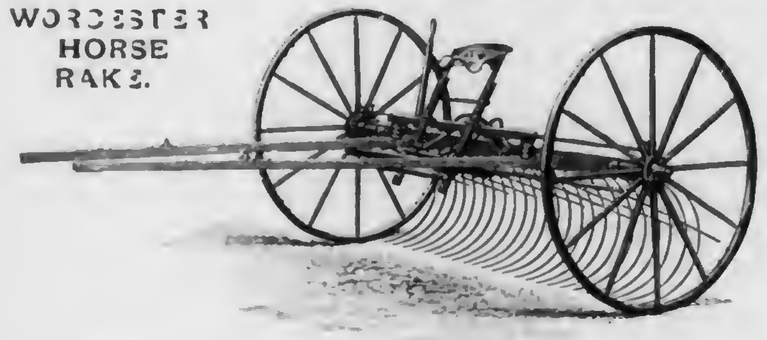

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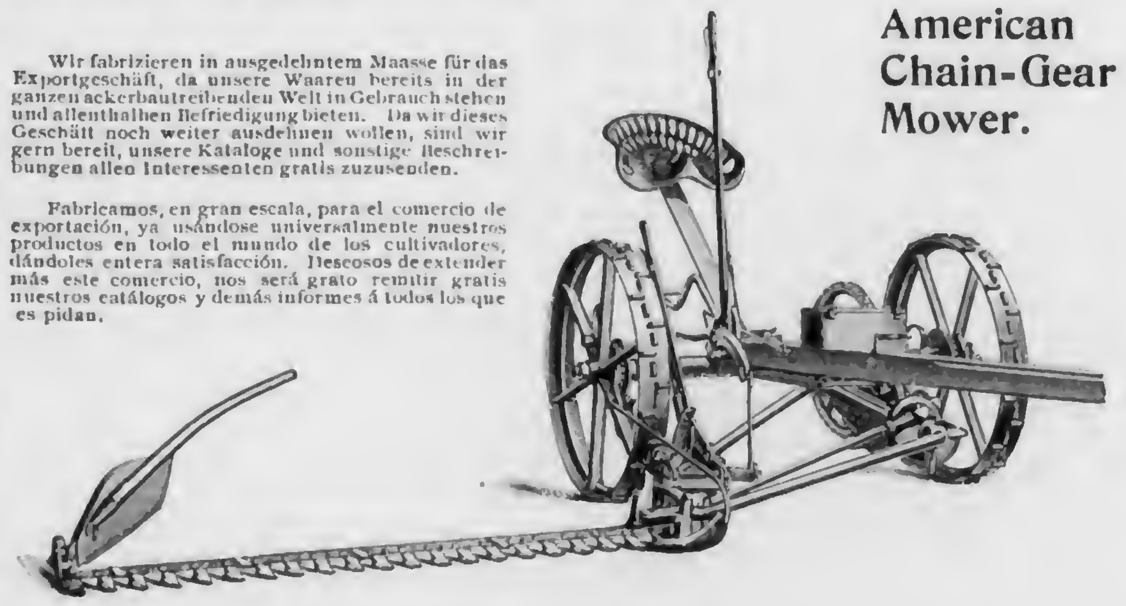
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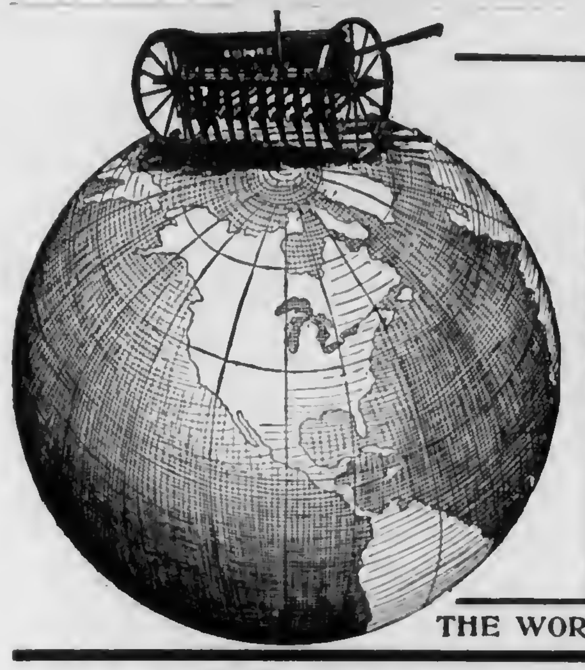
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IN GREAT VARIETY.

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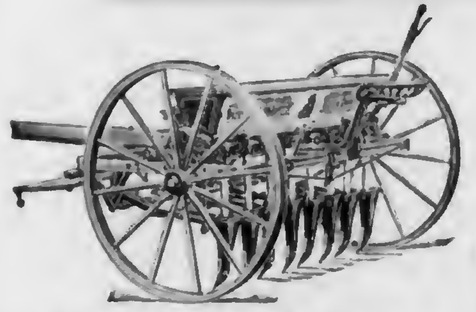
Of Wheat Seeding Machines is the largest and most complete line made. It is not a side line with us. We make nothing but Seeding Machines.



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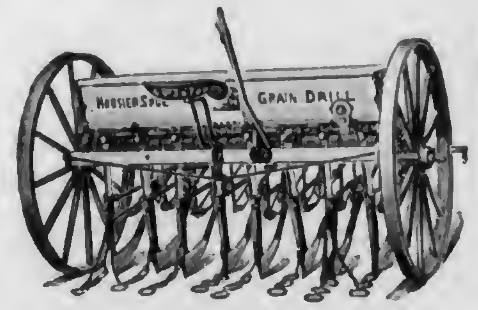

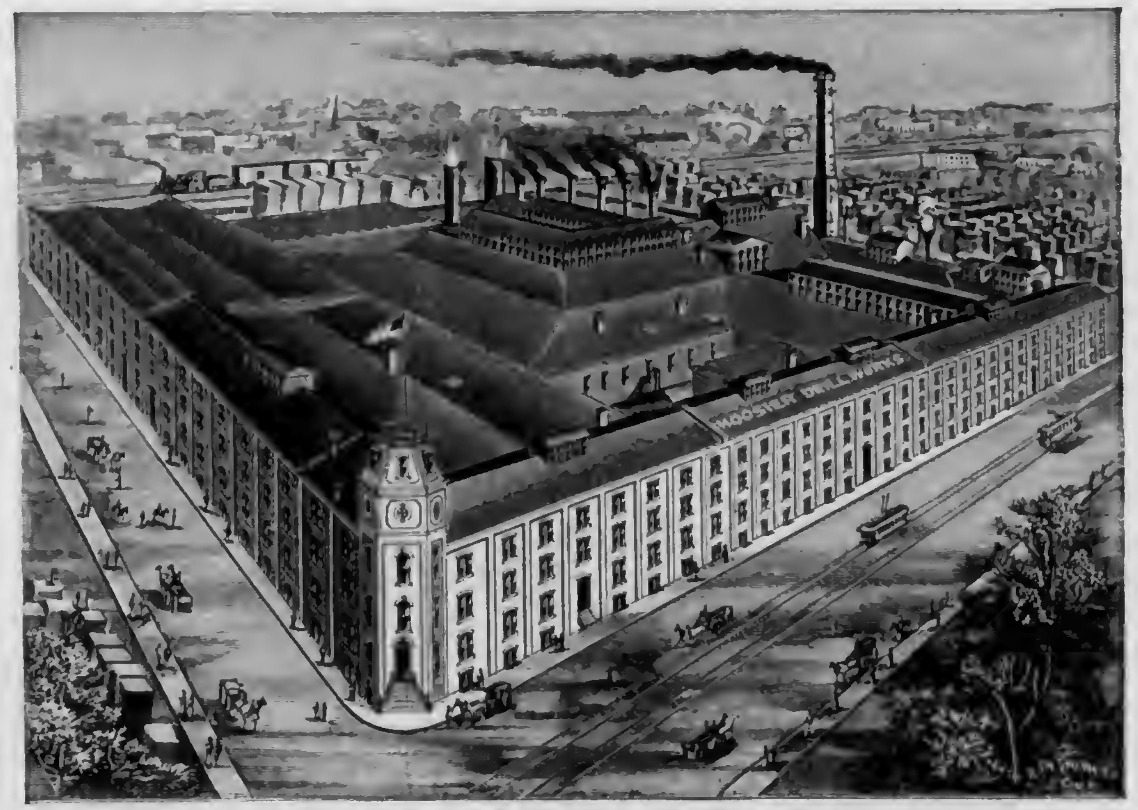

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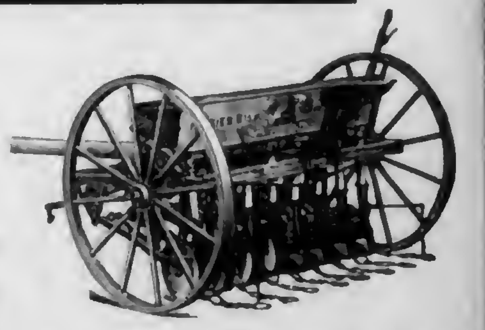

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Means that you are getting a thoroughly up-to-date, practical and durable machine—one that can always be relied on to do its work in a satisfactory way. **It does not mean** that you are buying an experiment, or something that will give you trouble and worry as long as you have it.

Buy the

"Hoosier"

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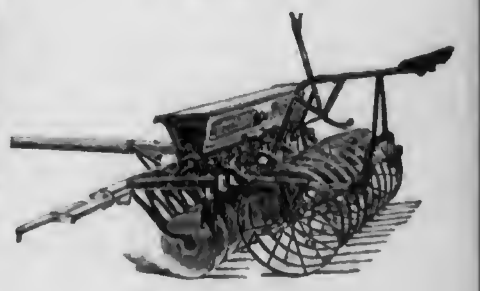

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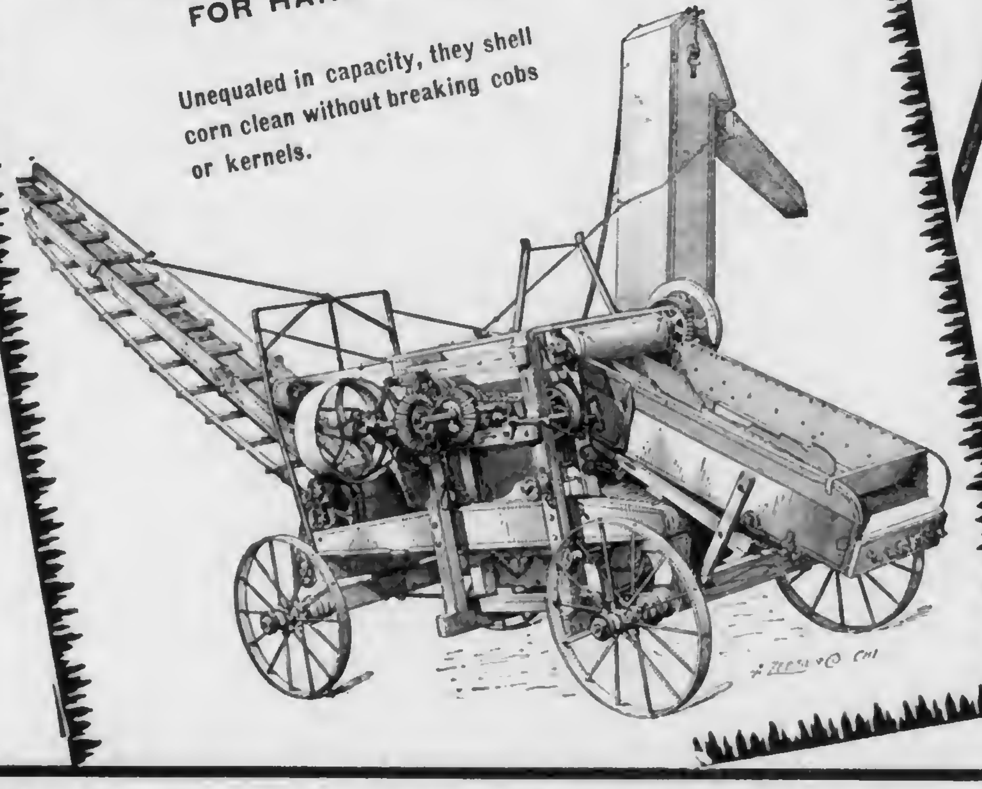
FOR HAND OR POWER USE.

Unequaled in capacity, they shell corn clean without breaking cobs or kernels.



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They possess few parts, therefore run lightest and cost least for repairs.

Easily adjusted to work in any variety or condition of corn, they often do good work where others fail entirely.

A Keystone Sheller usually does as much work as a size larger of other machines.

It leaves the cobs unbroken and in best shape for fuel.

Larger sizes are fully equipped with latest labor-saving devices—have the Keystone self feeder, new adjustable elevators, etc.

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Spring-Tooth Lever Harrows,
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Five-Tooth Cultivators,
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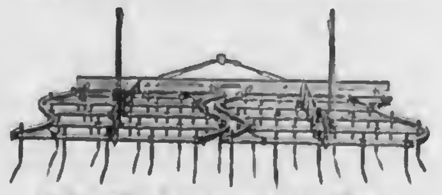
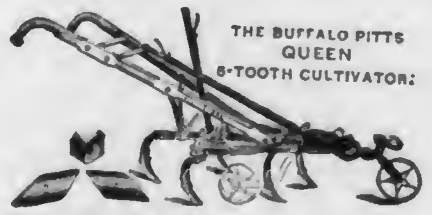
Catalogue Mailed upon application.



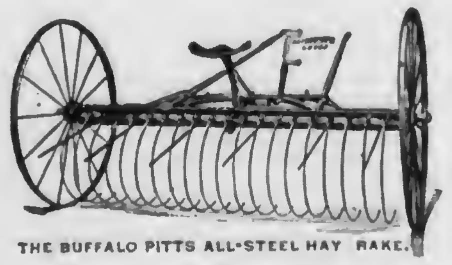
Buffalo Pitts Spring-Lever Spike Harrow.

Buffalo Pitts Combination Wheel and Runner Spring-Tooth Harrow.

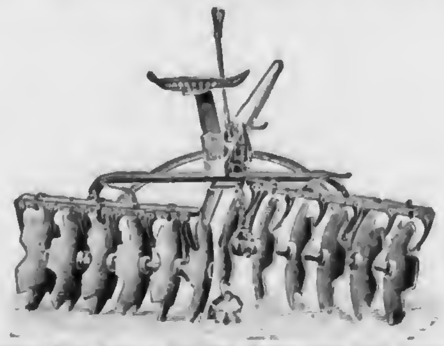


THE BUFFALO PITTS QUEEN 5-TOOTH CULTIVATOR:

Dotted line shows wheel released and thrown under for transportation.



THE BUFFALO PITTS ALL-STEEL HAY RAKE.



Buffalo Pitts Spring Flexible Spade-Cut Disc Harrow.

Buffalo Pitts Spring Flexible Disc Harrow.

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Picker Wheel and Cylinder Patterns.

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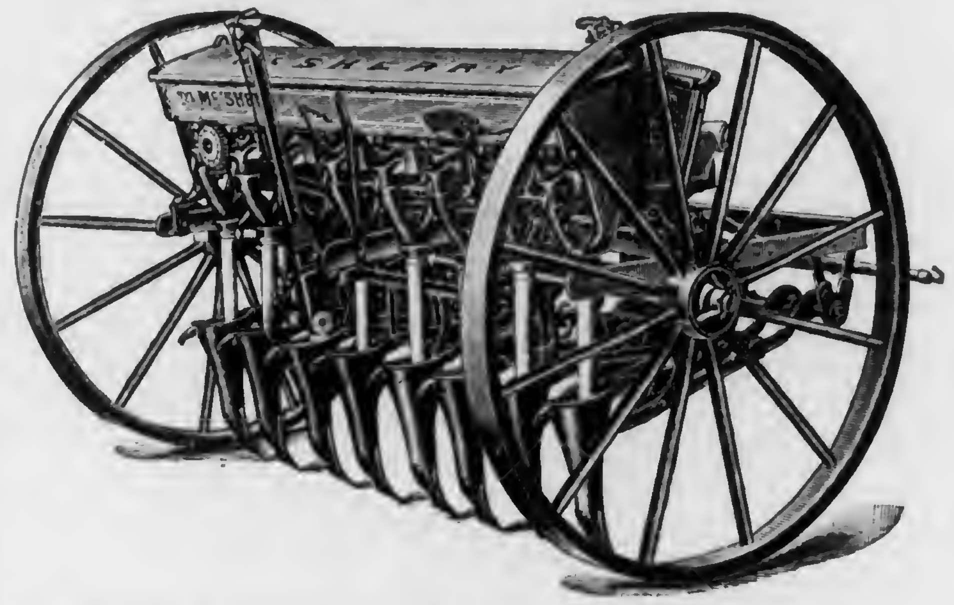

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It is sold on four continents.

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A DIGGER THAT DIGS

Save MONEY,
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Save HORSES and
Save POTATOES
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It Sells Itself.

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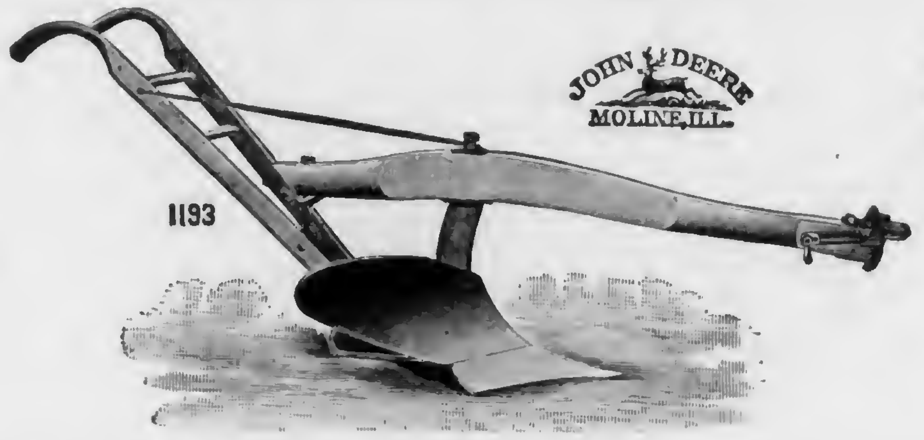

While we :::
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First, Last, and Always, we Manufacture Plows for every purpose and every land. The **Deere Patent Steel Frame Plow** shown here is a representation of a line of goods chosen by the World's Fair Commission, in 1893, as showing the highest development, and representing the highest type of American Plow Manufacture, the **World's Highest Standard.**

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OLDEST AND LARGEST MANUFACTURERS OF STEEL PLOWS IN THE U. S.

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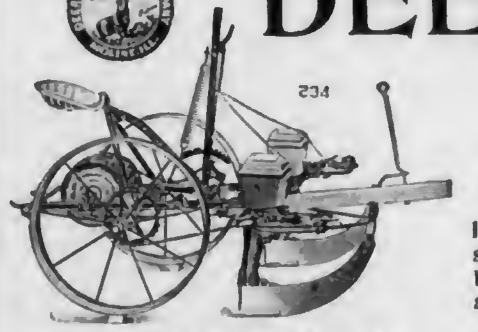
Have Stood the Test of Time.

23 YEARS

IN THE FIELD, during which they have passed the experimental stage and have come to be recognized as the standard of excellence, being especially noted for correct principles, perfect construction and effective operation.



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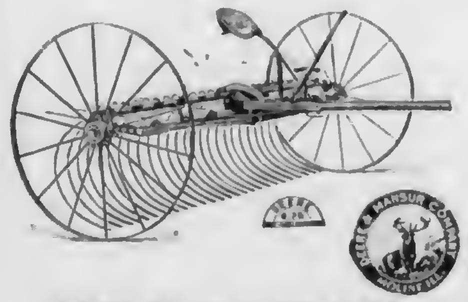
Easy to operate, and will work as well in muddy as in dry ground. It has force drop, spring lift, check rower, drill and foot drop; simple automatic reel; is adjustable in width. Furnished with choice of wheels. Seat is adjustable.



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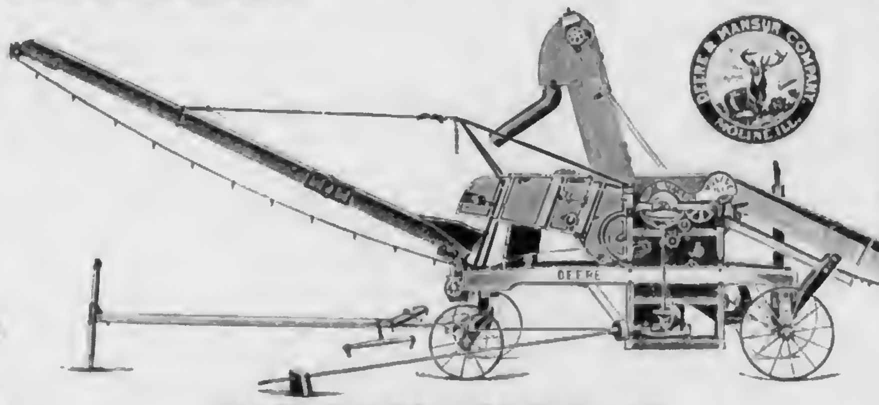
Dump is driven from both wheels. The teeth and cleaners are made of best spring steel, the teeth having a coil section. Made in all widths and furnished with combination pole and shafts.



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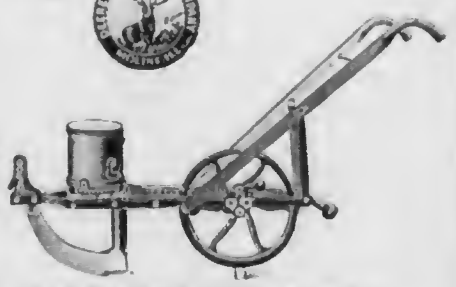
In the Deere there is no shaking shoe or sieve, and as a result the machine can be run at much higher speed, insuring great capacity. The throat is large and presents moving surfaces on all sides. With these Shellers the corn is perfectly cleaned and the cobs left in good condition for fuel.

Made in all sizes, mounted or down, belt or geared. The mounted Shellers have tilting elevator and folding cob-stacker.

DEERE DISC HARROW.

Made in sizes from 4 to 12 feet, and with 16, 18 or 20 inch plain or cutaway discs. The cross bar is square steel tubing, thoroughly braced. Has steel shanks; wood bearings, with oil tubes; steel weight boxes, and each scraper is furnished with separate springs. Seeder or drill attachments can be furnished when desired.



DEERE ONE-HORSE DRILL.

For planting corn, beans, peas, broom-corn, beet seed, sorghum, etc.

DEERE & MANSUR CO.,
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Makers of Over 200 Sizes and Styles
OF THE CELEBRATED
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PLOWS

NO OTHER make has ever approached them in the two great **ESSENTIALS** for a perfect Plow, viz.: **CORRECT SHAPE** and **UNIFORMLY HARD TEMPER.** Our Catalogue No. 9 (page 3) explains just why this Plow has attained its great popularity. Please send for it. We make both **WOOD AND STEEL BEAM.**

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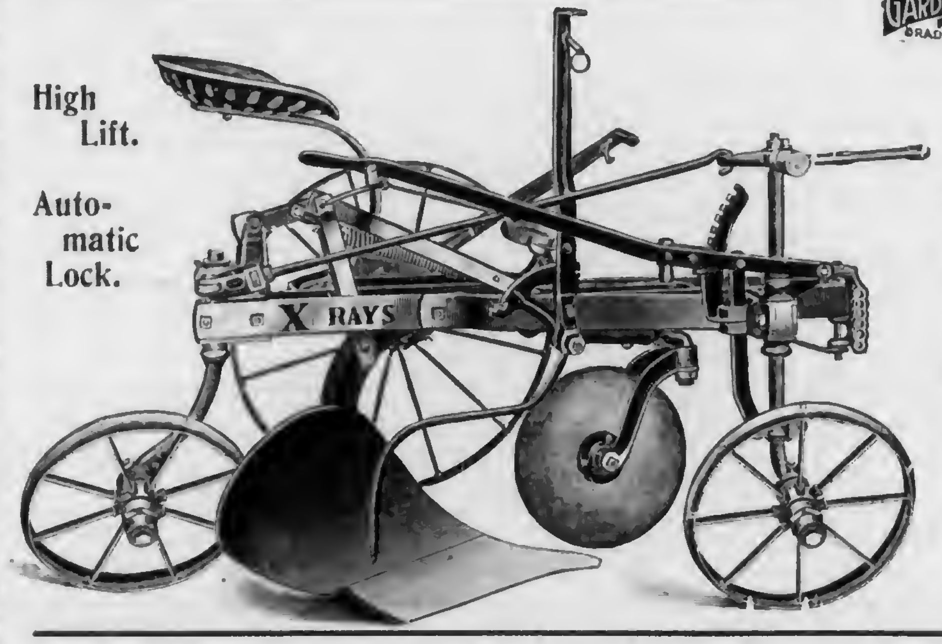
Automatic Lock.



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Have a powerful **LIFTING SPRING.** A boy can handle them easily.

A PATENTED STOP carries the Plow on the frame and lightens draft.

A SPRING CLEVIS eases draft and saves breakage.

"GARDEN CITY CLIPPER" bottoms are put on these Plows.

BEST WORK with **LIGHTEST DRAFT.**

See December issue of this paper for more detailed description.

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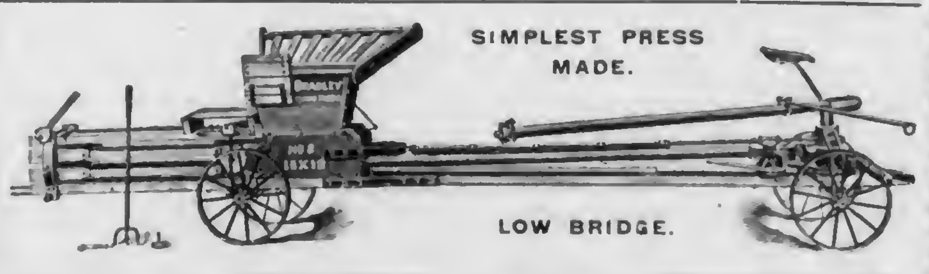
VERY FEW WORKING PARTS.
NOT A COG NOR CHAIN ABOUT IT.
NOTHING TO GET OUT OF ORDER.

3 sizes bale chamber: 14 x 18, 16 x 18 and 17 x 22.

CAN BE OPERATED BY ONE HORSE;
EASY WORK FOR TWO.
FULL CIRCLE, CONTINUOUS BALER.
LARGE CAPACITY. VERY POWERFUL.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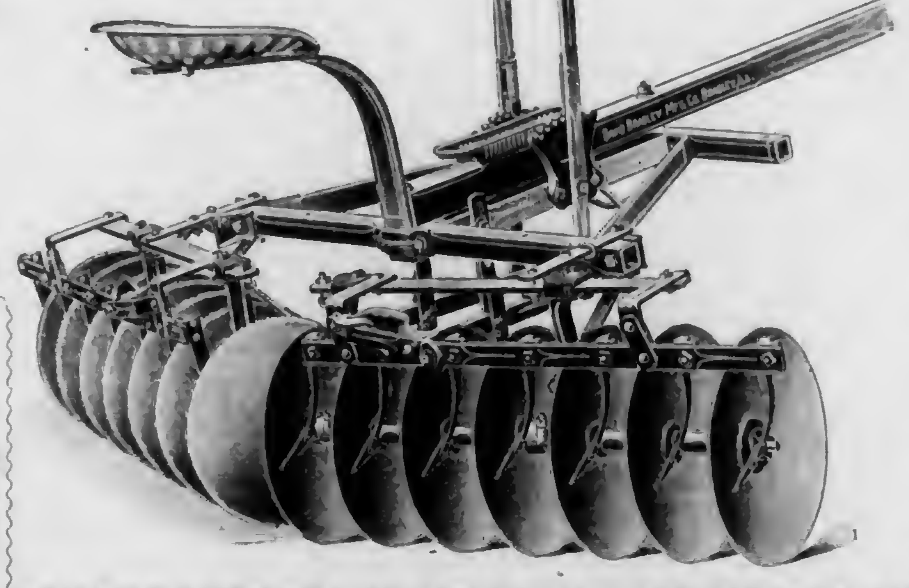

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TWO LEVERS, one for each gang.

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Quincy Beauty Riding Plows.

For use with Horses or Cattle.

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will pulverize any soil. Teeth may be used at any slant.

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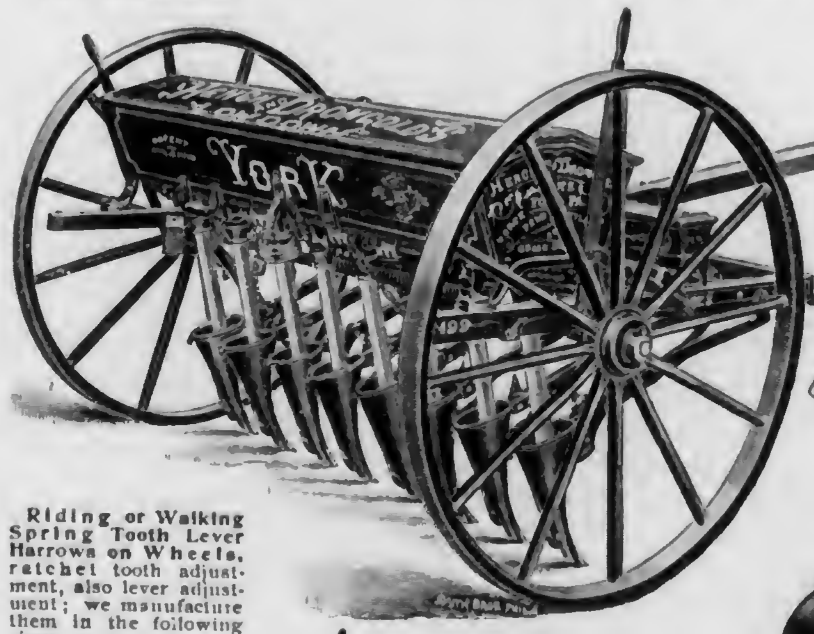

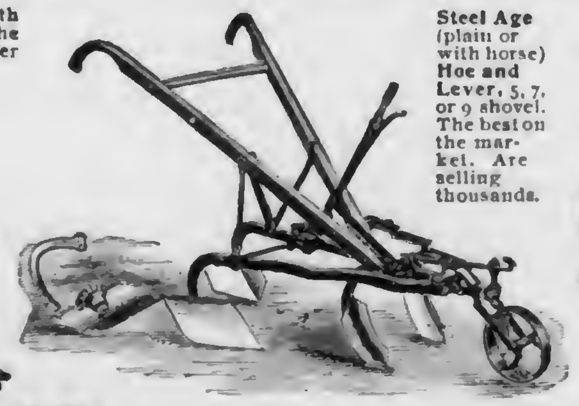

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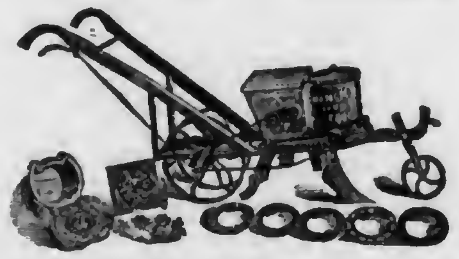

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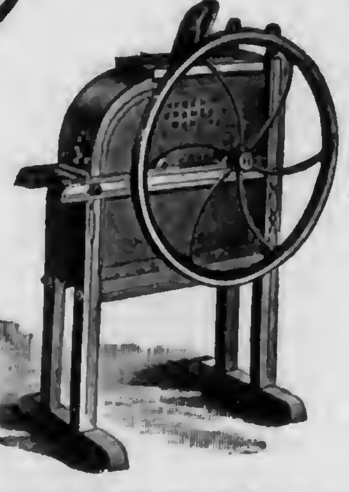

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Fifty different styles.

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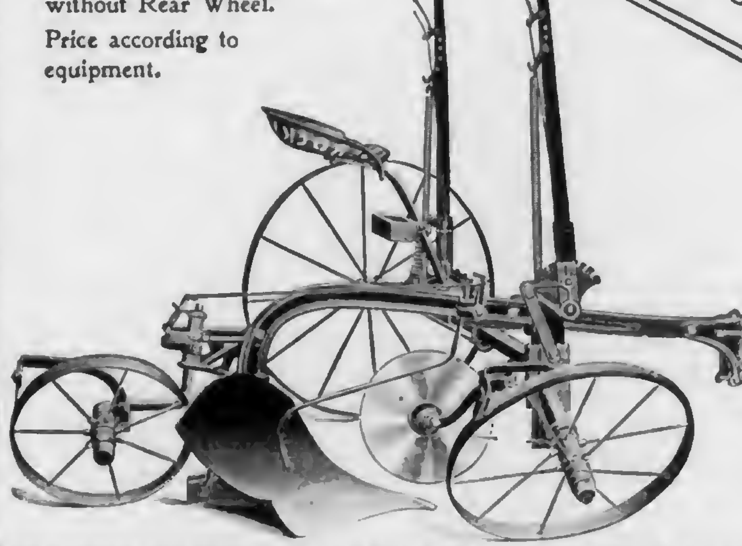

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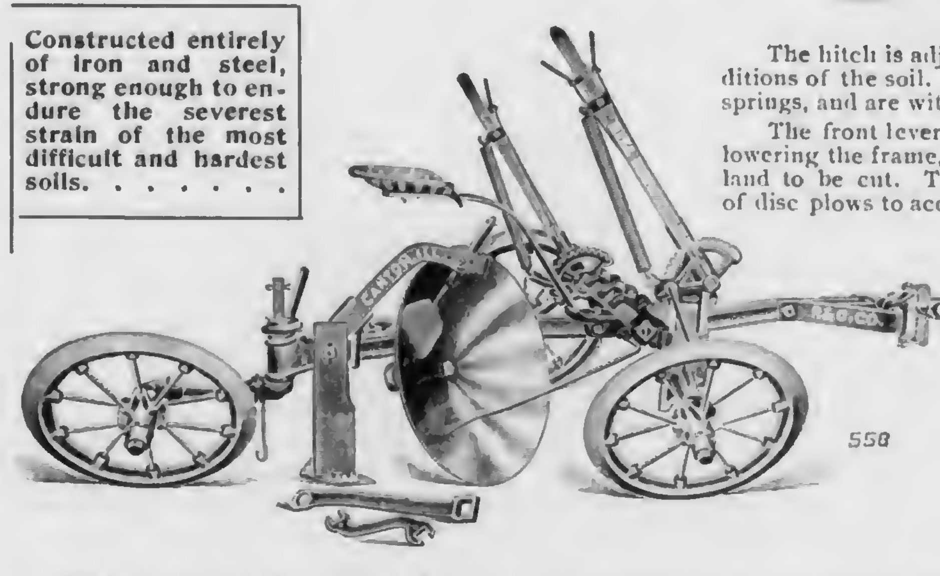
Constructed entirely of iron and steel, strong enough to endure the severest strain of the most difficult and hardest soils. . . . . . .



The hitch is adjustable for size of team and various conditions of the soil. The levers are equipped with balance springs, and are within easy reach of the driver.

The front lever has two adjustments, one for raising or lowering the frame, and the other regulating the amount of land to be cut. Two levers are required on other styles of disc plows to accomplish these adjustments.

The large size and peculiar shape of the disc causes easy draft, and thoroughly pulverizes the soil. The disc axle is ball-bearing and dust proof, very effective and durable. As the bearings are cup-shaped, constantly holding plenty of oil, the lubrication is perfect. The scraper on the disc is flexible, and can be adjusted to assist in turning the soil. The disc is adjustable for cutting a furrow from 14 to 18 inches wide, and the plow will do its best work when cutting at a depth of from 6 to 10 inches.

The rear wheel is adjustable, and can be locked rigidly in hard ground, holding the plow in perfect line, or allowing plow to caster freely in turning corners when ground is in ordinary plowing condition.

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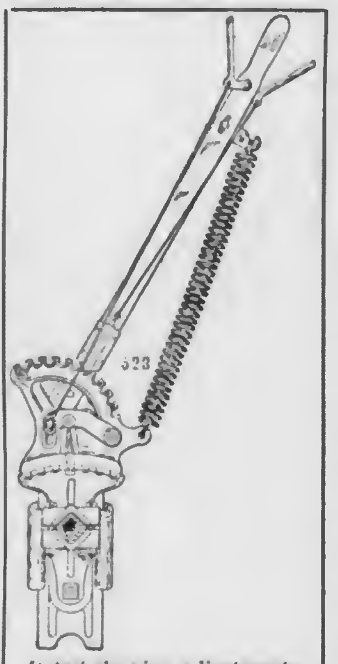

Detail showing adjustments on front lever.

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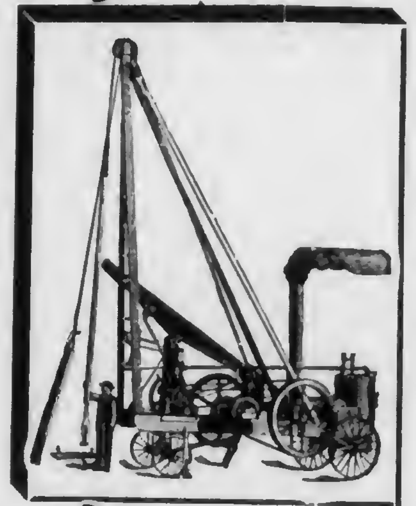

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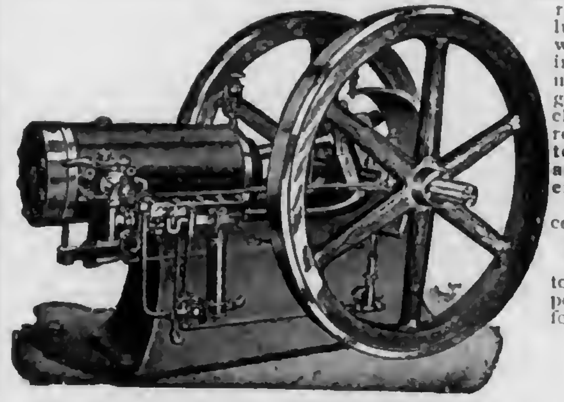

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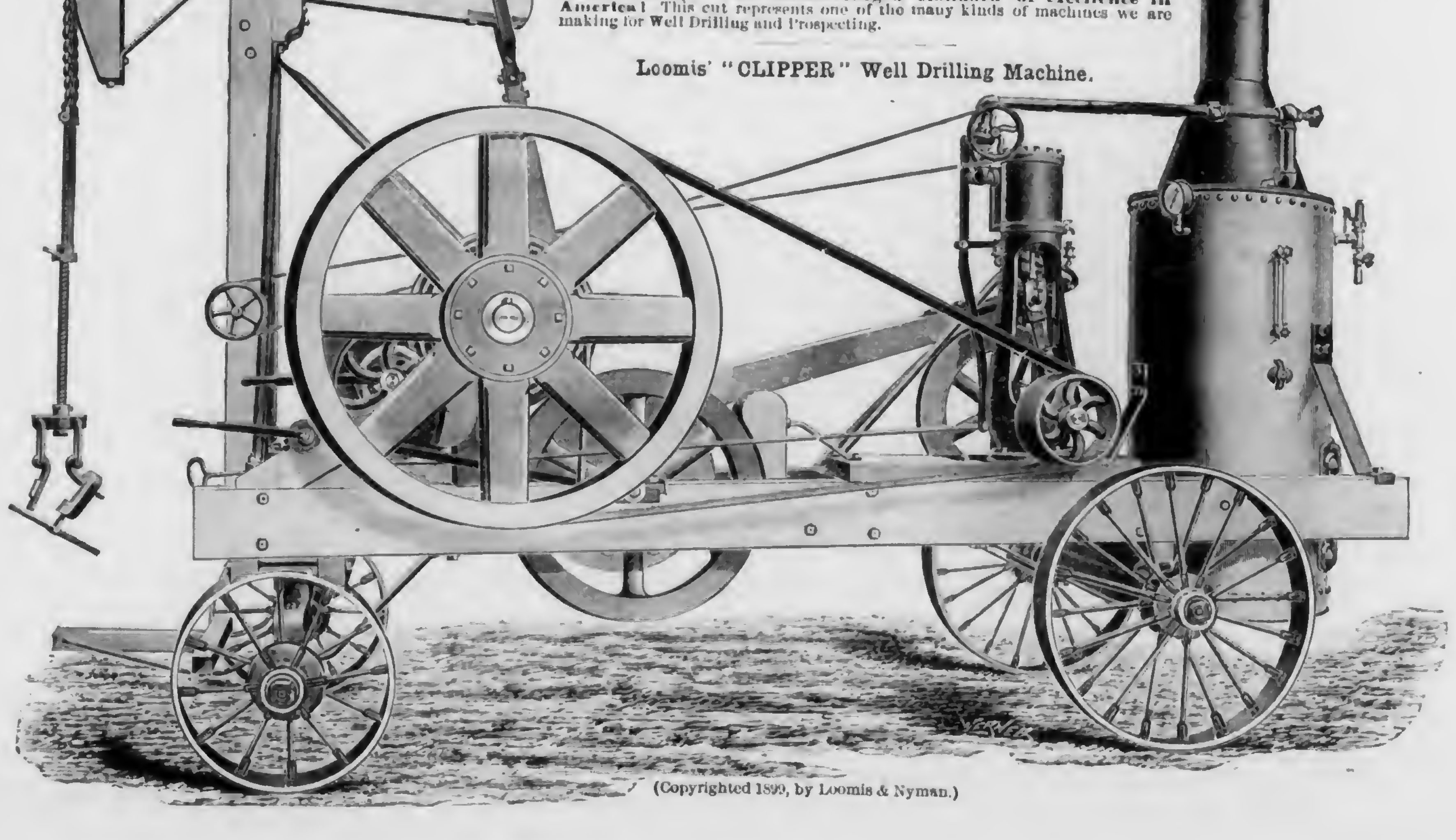

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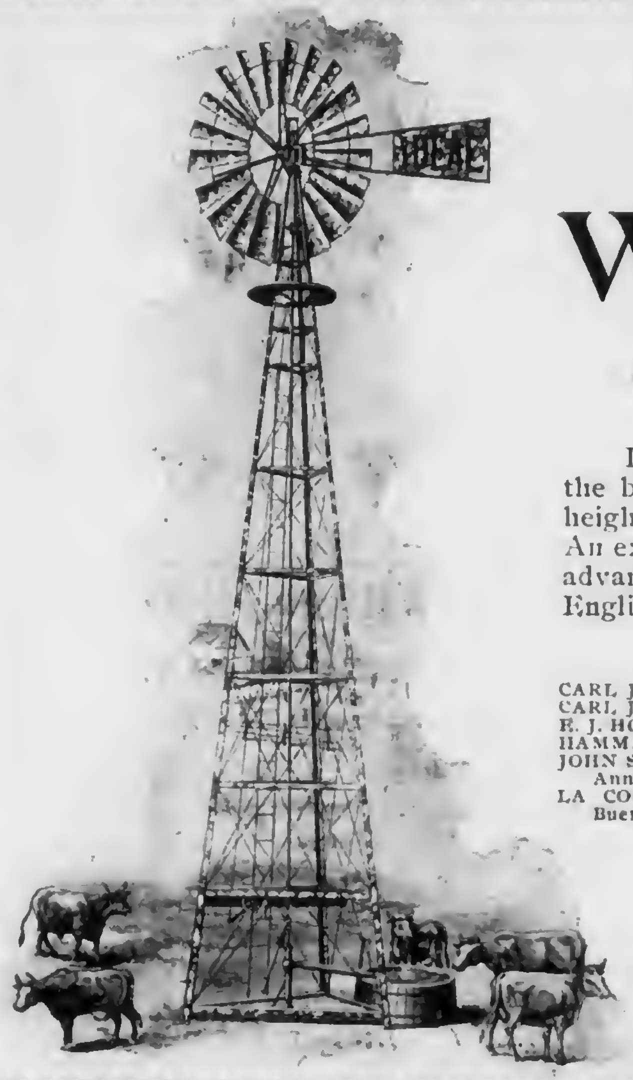

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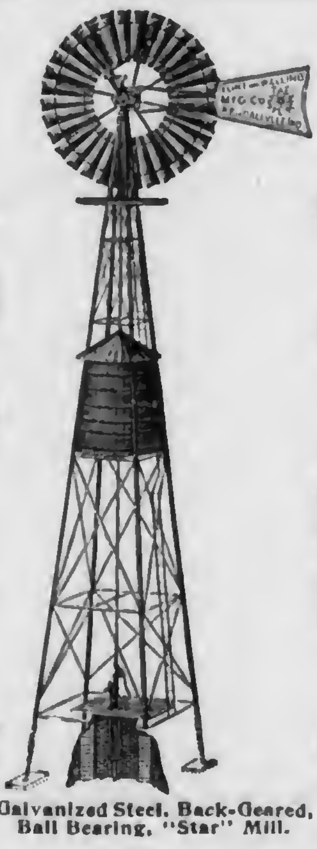

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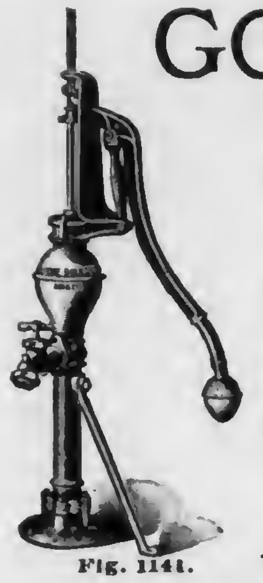
Fig. 1141.

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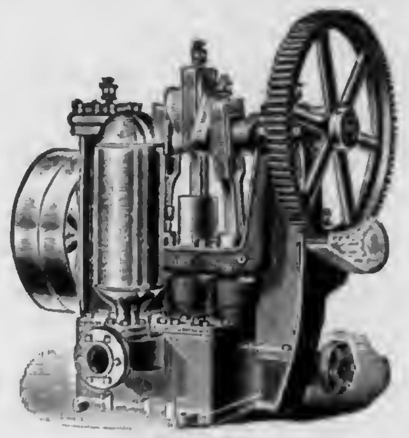
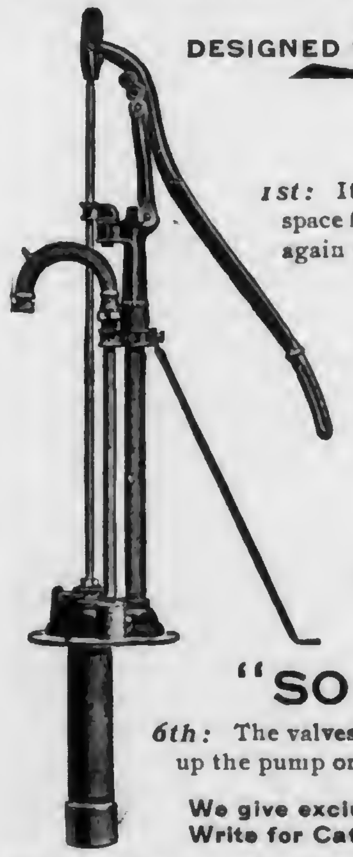


Fig. 921.

Red Jacket Force Pump



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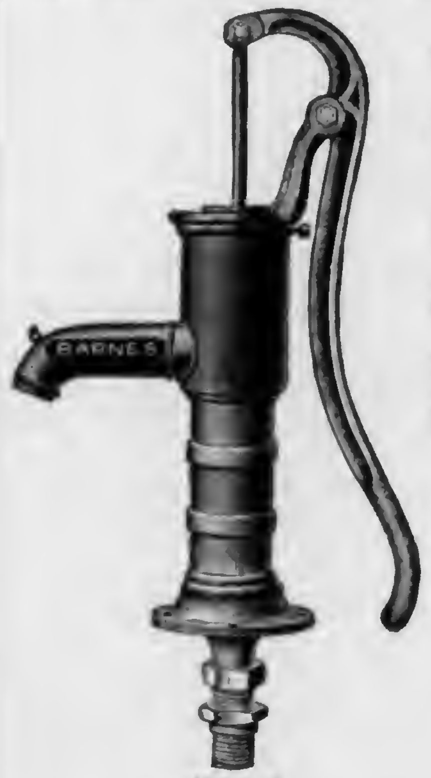

Fig. 107

*

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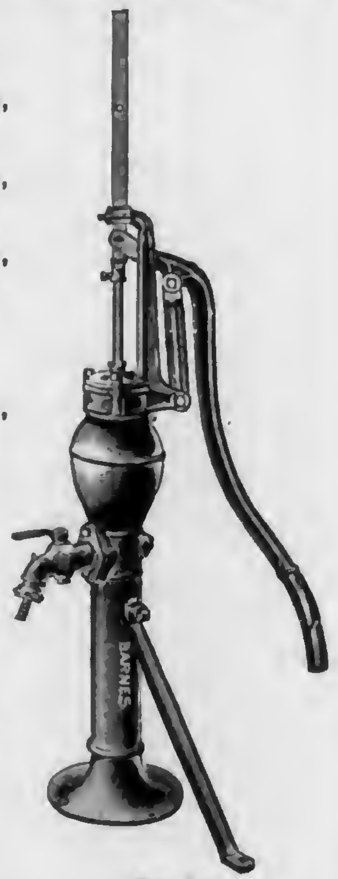

Fig. 551

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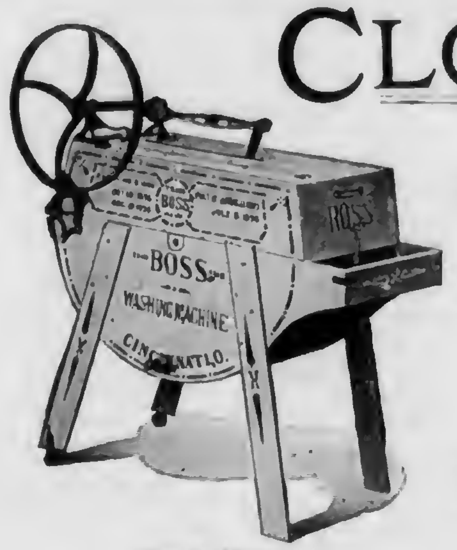

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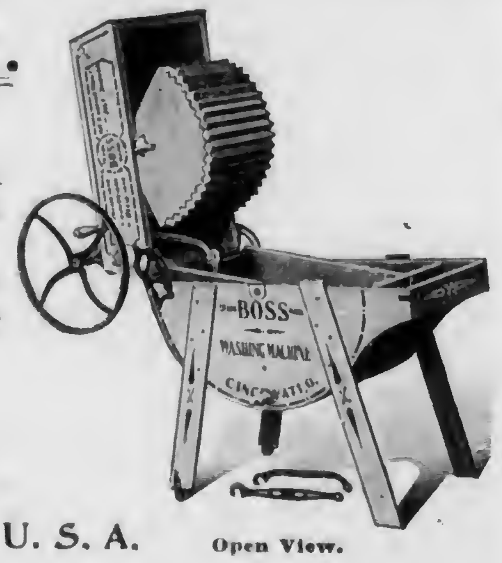

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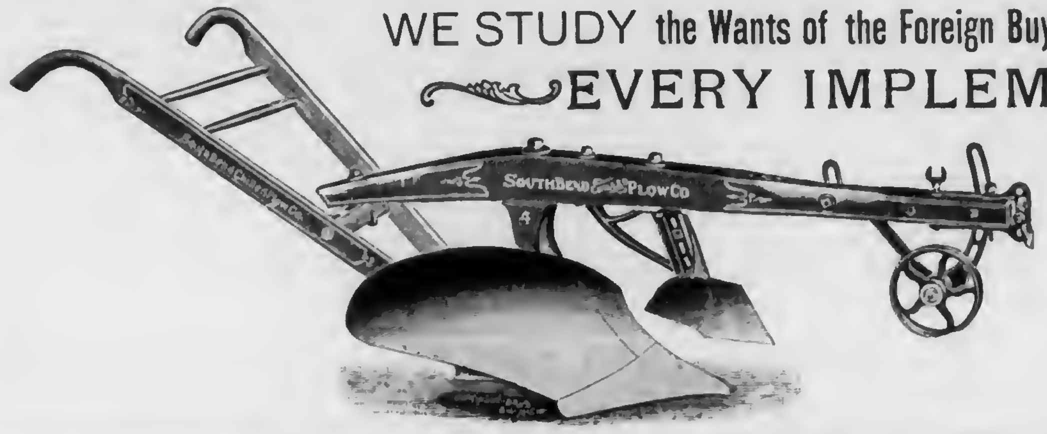
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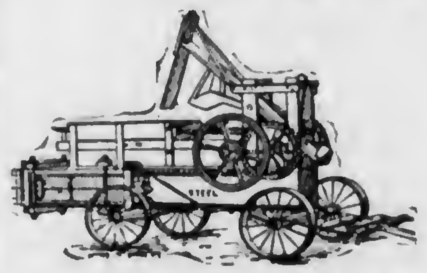

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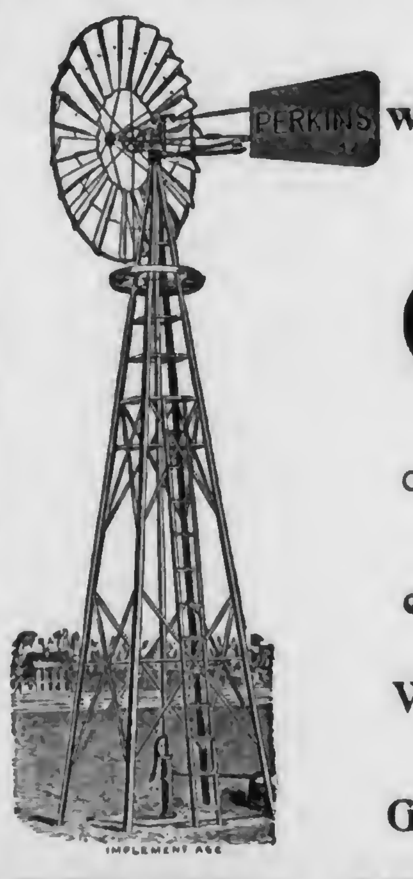

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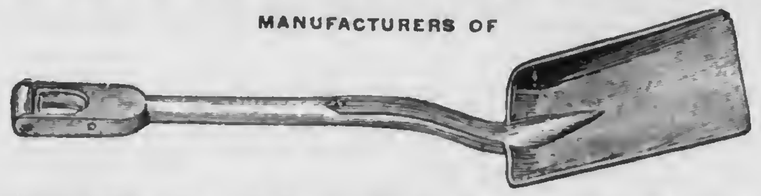

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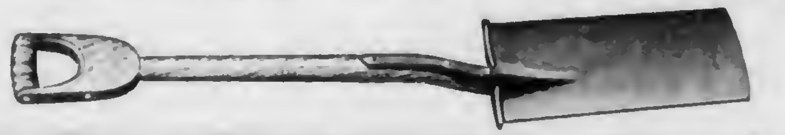

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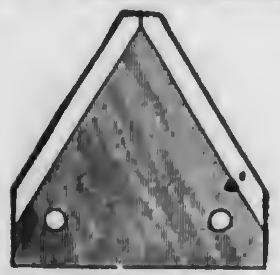

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Mower Knives, Reaper Sickles, Sections, Guards, Knife Heads, Pitman Boxes, Rake Teeth, Section, Head and Guard Rivets, Link Chain Belting, and Attachment Links, and other Agricultural Implement Supplies.

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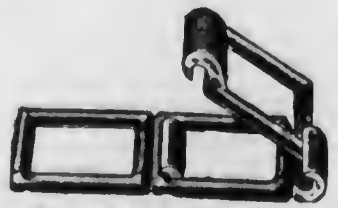

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TRADE MARK.
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AMERICAN STEEL AND WIRE CO.

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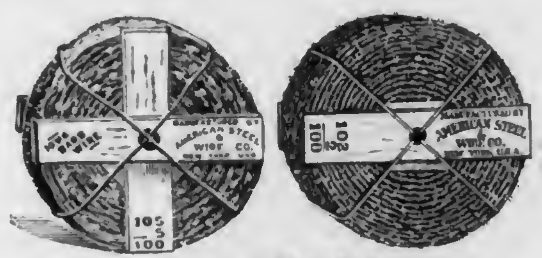
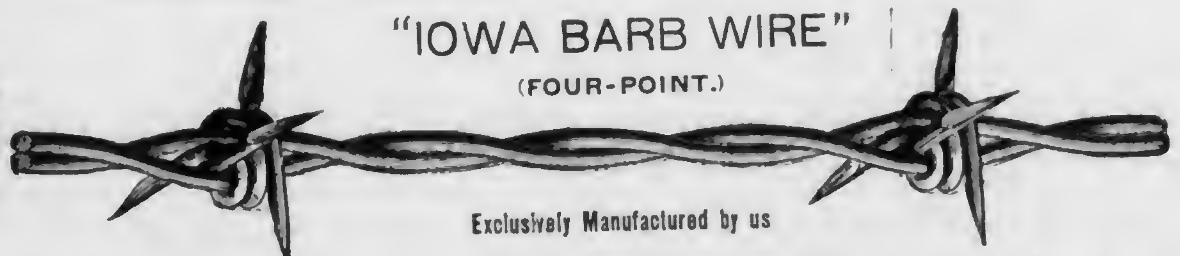
STEEL AGRICULTURAL and MACHINERY SHAPES.

COLD DRAWN SHAFTING, HOMOGENEOUS STEEL, HOT ROLLED STEEL SHAFTING { ROUNDS, SQUARES, HEXAGONS FLATS AND ODD SHAPES.



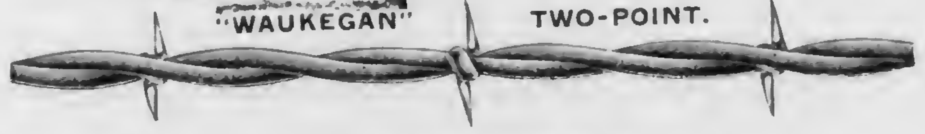
Styles of Packages.

"IOWA BARB WIRE"
(FOUR-POINT.)

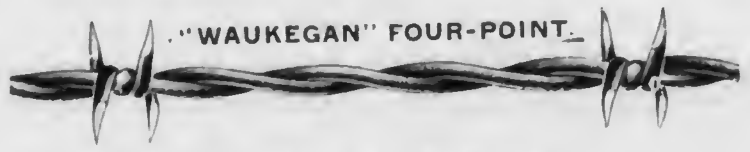


Exclusively Manufactured by us

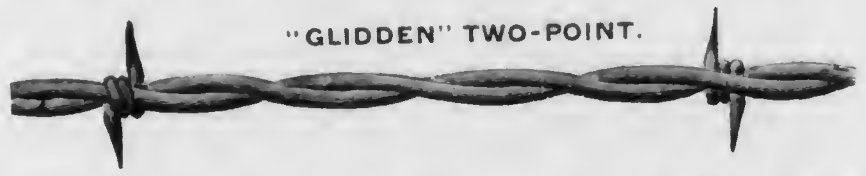
"WAUKEGAN" TWO-POINT.



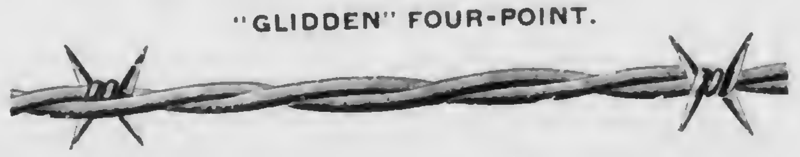
"WAUKEGAN" FOUR-POINT.



"GLIDDEN" TWO-POINT.



"GLIDDEN" FOUR-POINT.



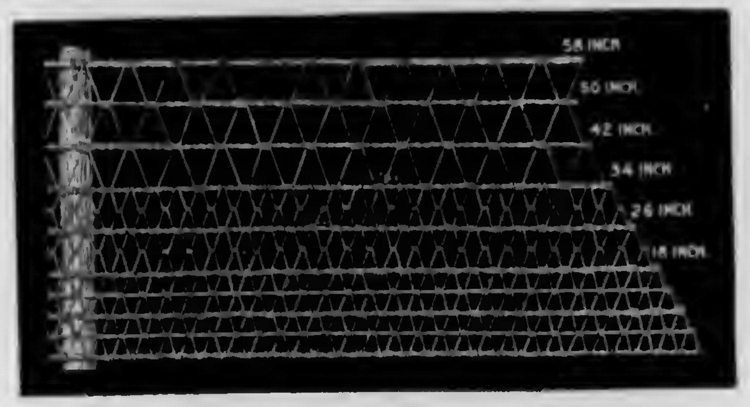
Some Special Nail Heads.

WIRE NAILS. Round, Oval or Square Wire.

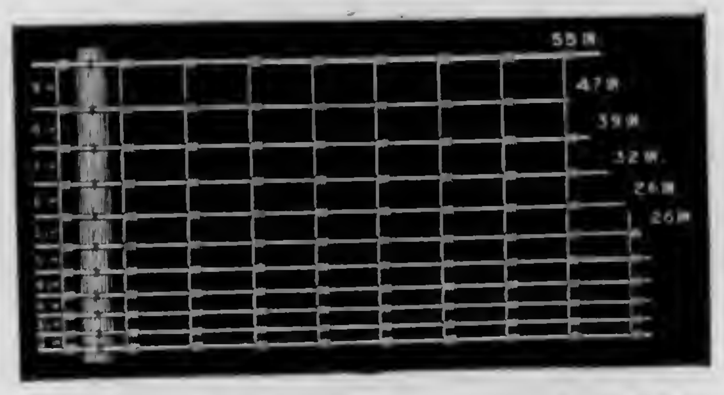
Every Style of Head or Point. Our Nails are Guaranteed First-class in every respect, and will be found Stiffer, Stronger and Better made than European Nails. Packed in wooden kegs and cases, canvas bags and paper parcels of various sizes.

WOVEN WIRE FENCES.

All made of Hard, Strong Steel Wires, heavily Galvanized.



ELLWOOD Steel Fences—6 heights, 6 styles.



AMERICAN Field and Hog Fences—6 heights, stays 12 in. or 6 in. apart.

The wires in these fences are large enough for all ordinary requirements, the fences being cheap, durable and efficient—will last a lifetime. Put up in rolls of 20 and 40 rods—sold by the rod. Perfectly adapted to fencing railroad rights of way, farms, fields, orchards, vineyards, etc.

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AMERICAN STEEL AND WIRE CO.

THERE IS NO ARGUMENT

against a disc harrow that pulls easily. Other faults may be almost overlooked if it possesses that one virtue.

That is the strong point in our

DETROIT AND WOLVERINE DISC HARROWS.

They run easily.

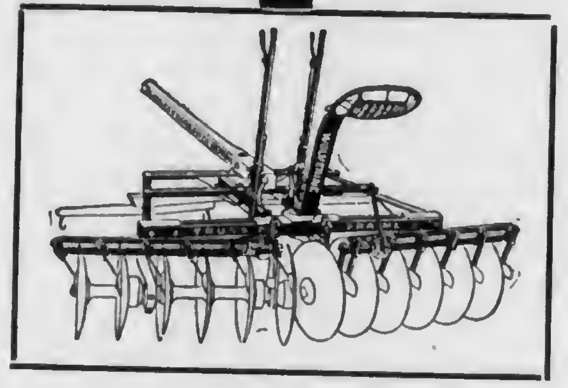
It is this ease of running that established them standard in America.

These discs have genuine bicycle ball bearings. They are well made, tested true and give to our discs a light draft that is peculiar to them.

You can't find that sort of a draft on any other disc harrow on earth. Besides its easy qualities the draft is from the under-centre, and that keeps it steady and the discs cutting an even depth.

Get our 1900 catalog and learn other good points about our **Detroit** and **Wolverine.**

Riding and Walking Harrows, Cultivators, Seeders, Planters, Fertilizers, Bean Harvesters, Stalk Cutters, Manure Spreaders, Road Levelers, Truck Scales, Hand Potato Planters and Bicycles.



NO HAY OBJECIÓN

contra un rastrillo de disco de tiro fácil. Y casi se le pueden perdonar otros defectos al que posee esta condición.

Es esta la cualidad sobresaliente de nuestros

RASTRILLOS DE DISCO "DETROIT" y "WOLVERINE."

Ruedan con gran facilidad.

Este fácil rodar los señala como modelos en Norte América.

Los discos tienen verdaderos coginetes de bicicleta con esferas. Están esmeradamente hechos, bien probados, y proporcionan á nuestros discos un tiro liviano que les es especial.

Igual ligereza en el tiro no se encuentra en ningún otro rastrillo de disco en el mundo. Además de esto, la tracción se hace desde el centro interior, lo cual da estabilidad é igual profundidad al corte de los discos.

Pídase el catálogo para 1900, y conózcanse las demás buenas condiciones que reunen el "**Detroit**" y el "**Wolverine.**"

Rastrillos con ó sin Asiento, Cultivadoras, Sembradoras, Plantadoras, Fertilizadoras, Segadoras de Judías, Picadoras de Tallos, Regadoras de Estiércol, Niveladoras de Caminos, Balanzas de Carreton, Plantadoras de mano para papas, y Bicicletas.

AMERICAN HARROW COMPANY,
DETROIT, MICHIGAN, U. S. A.

The Name "OLIVER" is a Guarantee of Excellence.

The Immense Factory Owned and Operated by
The Oliver Chilled Plow Works
Continues as Usual to Turn Out the Best Plows Made.

Europe, Asia, Africa, Australia, North and South America, and the Islands of the Sea compliment us by using our

WORLD RENOWNED CHILLED PLOWS.

And at Home and Abroad THE OLIVER Is the Standard of Excellence.

Our large and varied assortment provides for the most exacting style of plowing, and from the easiest to the most difficult soils.

Oliver Chilled PLOWS
Are the Best on Earth.

The rigid system of tests and inspection in force at our works guarantees to every purchaser a first-class plow, perfect in every detail and reliable under all circumstances.

The No. 40 Series Full Chilled Sloping Landside. Wood and Steel Beam.

Nos. 98 and 99 Oliver Steel or Wood Beam Combination Plow. With Reversible Point and Wing. Self-sharpening by use.

Our business has grown from 1,500 plows in 1873 to an annual output of more than 200,000 plows, and we have

The Largest Distinctive Plow Works in the World.

Oliver Chilled Plow Works,
South Bend, Indiana, U. S. A.

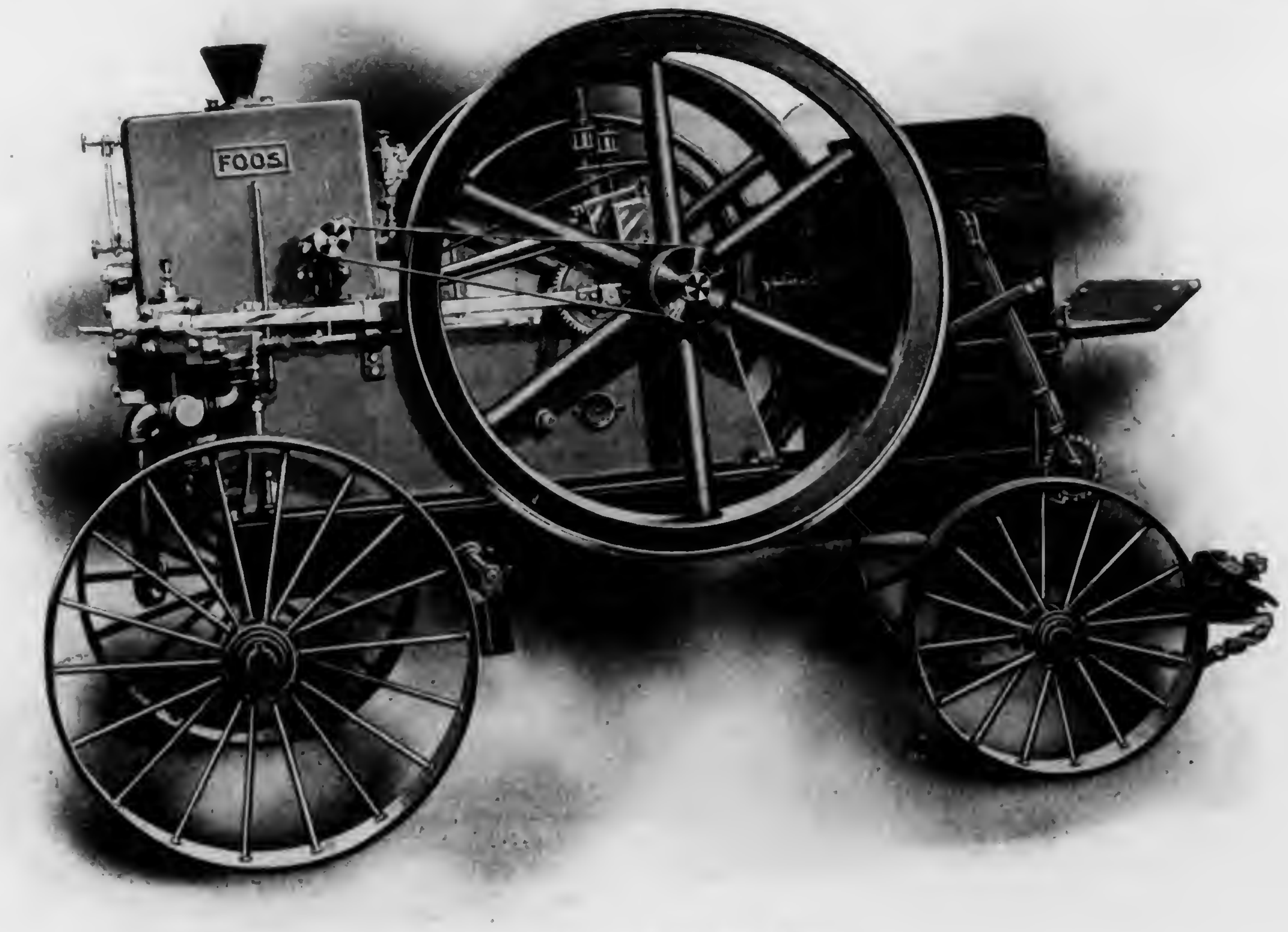
EXPORT IMPLEMENT AGE.

Vol. III. Philadelphia, Pa., U. S. A., November, 1900. No. 2.

GAS AND GASOLINE ENGINES.

Their Value on the Farm and the Great Saving in Power and Other Expenses by Their Use.

Although in some countries the importation of gas and gasoline engines is prohibited yet no barriers will ever prevent the introduction of any article that possesses sufficient merit to force itself into consideration. In Europe the kerosene engine has long been in use, but Americans have found the gas and gasoline engine better adapted for their purpose, it being reliable, quickly started, safe, powerful, and possessing many features to be commended. When one has only to depend upon gas, or resort to gasoline, it is a convenience to be appreciated. That the gas and gasoline engine deserves the consideration of the people of all countries is a fact, and that the American manufacturers excel in such lines is admitted.

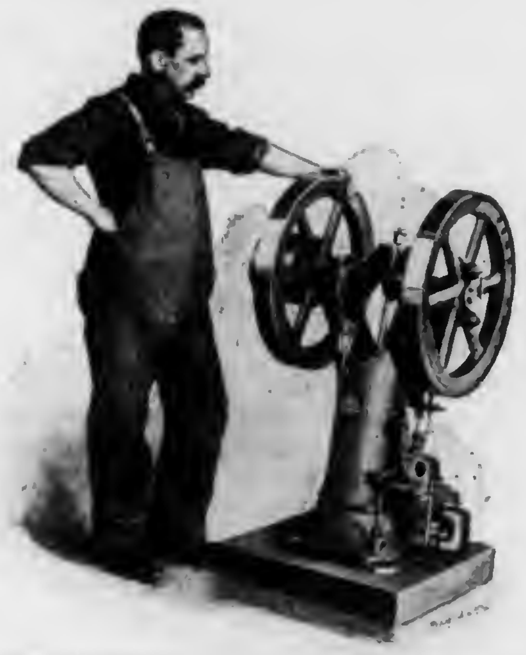


Type of American Portable Gas and Gasoline Engine.

The farmer has for centuries depended upon the horse and ox as his sources of power, and so accustomed is he to the traditions and customs of his fathers that he does not eagerly look beyond the farm for that which will enable him to keep fewer animals, use greater power, and derive larger profits by reason of reducing expenses and lessening the drudgery of labor.

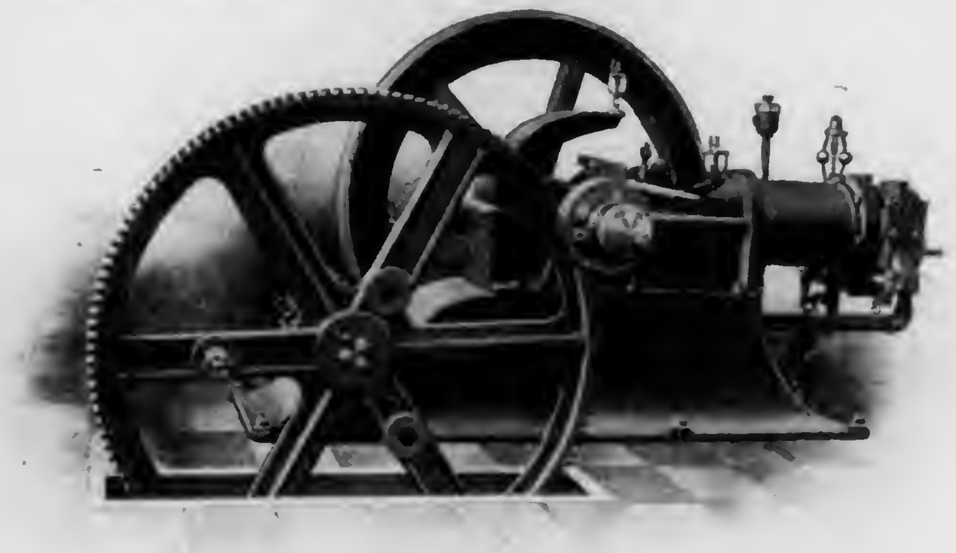
The manufacturer, unlike the farmer, does business on close margins of profit, and is compelled to resort to power from engines, or some source, in which is combined compactness, durability, efficiency and certainty. The horse and ox could not be made available for his purpose. He has been educated to a knowledge of the economical use of power by force of circumstances. The farmer, not being brought under the direct necessity of using power in its cheapest form, has paid dearly for that which the manufacturer receives at minimum cost.

The abandonment of hundreds of farms in this country, and the failures of farmers, in many cases, may truthfully be ascribed to the fact that they pay dearly for the power on the farm. The horse may not require an "engineer," but demands all the care necessary for the preservation of an engine. If the engine must be fired, governed, cleaned, oiled and repaired, the horse must be sheltered, groomed, fed and carefully attended to at all times. He must be given a pasture more valuable than himself, and he is subject to all the possibilities of sickness, death, etc. The power derived from the horse, in comparison with the value of the animal, the cost of maintenance and the wages of the attendant, is the most expensive known. Yet the farmer uses the horse because he understands its management and considers the animal indispensable for the reason that, so far as his education has advanced, he has found no substitute therefor.



Type of American Vertical Gas and Gasoline Engine.

Nor is the farmer wrong from one standpoint. The horse is a living engine. While the carbonaceous materials for producing heat and power are not supplied him in the form of coal, yet he consumes grains, grasses and other substances, and for the same purpose as the coal is furnished the engine. The horse emits the gases through his nostrils, voids the refuse materials, consumes large quantities of water, and wears out the same as does the engine. But, unfortunately for the farmer, he must supply the living engine with food and water at all times, whether employed or out of use, and the power derived is small in comparison with the cost because the living engine must be maintained at a heavy proportionate expense.



Type of American Gas and Gasoline Engine Used for Deep Well Pumping.

The power of the present day is being derived from fuel. Even the farm has been invaded by implements and machines that displace the horse. There has recently been introduced the auto-mower, which mows grass, the automobile (both light vehicles and wagons) is well known and the auto-plow, auto-cultivator, auto-harrow, etc., are being tested. In a few years the term "auto" will be superfluous, as the machine will be in extensive use. The horse has left the service of the city railroads, the express companies are banishing him, and on large farms he is employed for the saddle rather than in harness.

Type of American Vertical Engine, used for Miscellaneous Purposes.

Invention brought out the gas and gasoline engine. It is to the farmer a combination of everything used for furnishing power. It occupies no more room than one horse, though the power derived from it may be from two to twelve times as much. In fact, it may be stated that there is no limit to the power, as the engines may be made of any size. What we wish to consider, however, is the small engine, such as the ordinary farmer will find convenient for his many purposes.

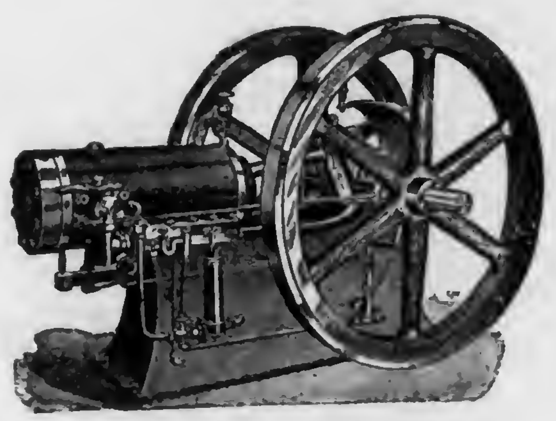
But it is not the farmer only who is interested, as gas and gasoline engines are used even more extensively in the villages, towns and cities than on the farms. One of the principal advantages of gasoline engines is that they may be used as auxiliaries to steam engines. American gas and gasoline engines are of the highest possible horse-power in proportion to size and space occupied, and are used with steam power when quick firing or temporary work is necessary. For instance, where it is inadvisable to fire up a steam boiler and engine, the gasoline engine is resorted to, and some factories use gasoline engines with steam engines for that purpose alone, as they can be started almost immediately and entail no expense when not in operation. It is not inferred that the gasoline engine can supersede the use of steam, for the steam engine is as essential to-day as in years past, but the gasoline engine fills a place where steam power cannot easily be obtained, and it increases the sales of steam engines because it enables the operators to save expenses during dull periods or when but little power is required. It fills a place of its own, is not in conflict with power from other sources, and enables many to use power who could not otherwise do so.

Gasoline engines are vertical or horizontal, as preferred. No engineer, no fireman, no coal, no smoke, no ashes, no litter, no waste of fuel, and no danger from fire or explosion. Engines are so improved at the present day that the governor to the engine automatically regulates the speed and proportions the amount of fuel.

Type of American Portable Engine.

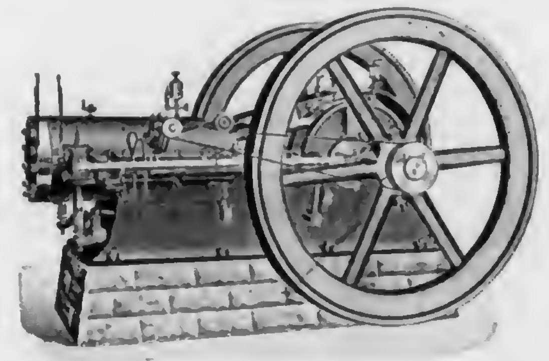
In factories it may be more convenient to use gas, but the farmer prefers gasoline. Some engines are "fired" by simply using a lighted match. Others are started by simply turning the engine over, or revolving the fly wheel. No operator is required. It is made on the safety principle and will regulate itself.

The manufacturers of gasoline engines well know that if doubt existed regarding safety, durability and amount of work performed, they could not sell them. They understand what the farmer desires and they are compelled to comply with his wishes or but a short time would elapse before the factories would close. The farmer can buy a gasoline engine with the assurance that he will receive a tested machine, but he cannot buy a horse with the certainty that the animal is sound and capable of fulfilling expectations.



Type of American Gas and Gasoline Engine.

The expense of operating is also to be considered. Each horse power, for ten hours' work, the engine put to its fullest capacity, should not exceed twelve cents, or whatever the price of a gallon of gasoline may be. In other words, a four-horse power gasoline engine can be made to do full work, for ten hours, with four gallons of gasoline. If the engine is not working to full capacity, this cost is reduced, as the governor cuts off the gasoline when only partial work is being done, using only as much gasoline as may be required for the development of the power used.



Type of American Gas and Gasoline Engine.

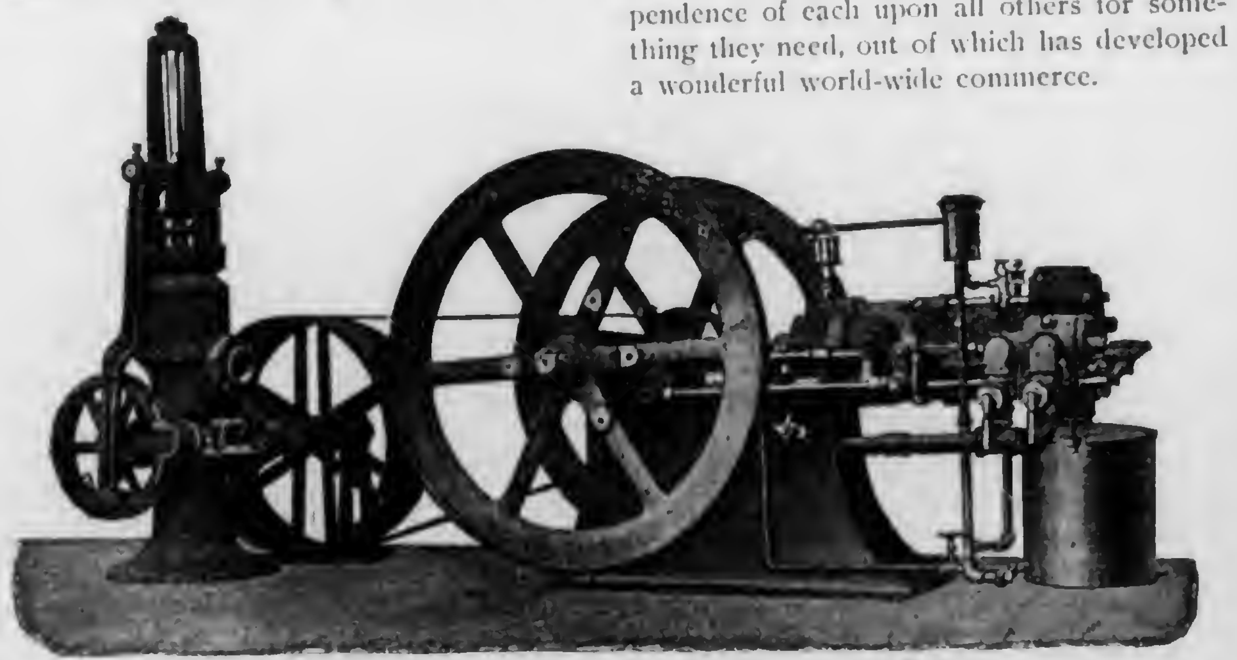
Safety is assured by reason of the gasoline being enclosed in protected tanks, and away from the engine, and the risk from fire is almost nothing, as provision is made for avoiding such danger, and so perfect have all safeguards against fire been made that it is doubtful if any record can be shown in which a single fire has occurred from a gasoline engine, while an "explosion" is impossible.

Much popular ignorance exists concerning gas and gasoline engines. Many still suppose them to be a form of steam engine in which gas or gasoline is burned as fuel under the boiler. The fact is that there is no boiler. Water is used to reduce the temperature, not to raise it.

With a little compact gasoline engine, taking up less room than a horse stall, and ready at all times for work, the farmer can be under shelter and thresh his wheat, grind the grain, cut the fodder for stock, pump water to any point desired, or employ power for various purposes, such as cider mills, churns, cream separators, shelling corn, sawing wood, ventilating, hoisting or running a small dynamo for electric lighting. There are many duties that can be performed with the aid of the gasoline engine, and much of the work can be done without the necessity of watching the engine.

For irrigating fields, or for many purposes connected with water supply, the gasoline engine is used in every State. It is one of the essentials for supplying water in some sections, being considered reliable and inexpensive compared with some methods in certain regions, and it is also used for supplying towns with water.

The gasoline engine may be carried to any field or placed wherever desired for use. Set on a wagon, or on wheels for the purpose, it is ready for work. Manufacturers make them both stationary and portable, but so handy is the little engine that it can be moved anywhere or made to give power at the closest point. It is a combination which cannot be excelled.



Type of American Gas and Gasoline Engine, in Connection with Pump.

It is not our purpose to describe a gasoline engine in detail, as any dealer or farmer who will write to a manufacturer will receive illustrated descriptions of all the parts, but we believe that dealers should endeavor to get more gasoline engines introduced, because the saving to the farmer is a profit which will increase the advantages of both the dealer and farmer. The gasoline engine has come to stay and it is finding a path to every farm.

THE AUSTRALIAN FIELDS.

It is advisable for implement dealers in Australasia to keep an eye open to what is being done on the Pacific coast to reach that quarter of the world. The people of New South Wales have profited by our plows, harrows and harvesters, but they do not profit by all we have. Our cultivators need to be better known, our steam and gas engines, threshing machines, feed cutters, and our light wagons are all entitled to more attention. They will find them of just as much service in their way as they have found our wine and cider presses, pumps and windmills.

A number of favorable influences are converging to make Philadelphia one of the great exporting points for American products. With a 28-foot channel the way will be opened to the largest freight steamers. Her three great shipyards and her two or three smaller ones have all the tonnage under contract which they can furnish in twelve months. Within a few months three new ship lines will be established. It was here that Stephen Girard dispatched his fleets all over the world and made Philadelphia the greatest shipping port in the earlier years of the century.

FREIGHTS AND SHIPS.

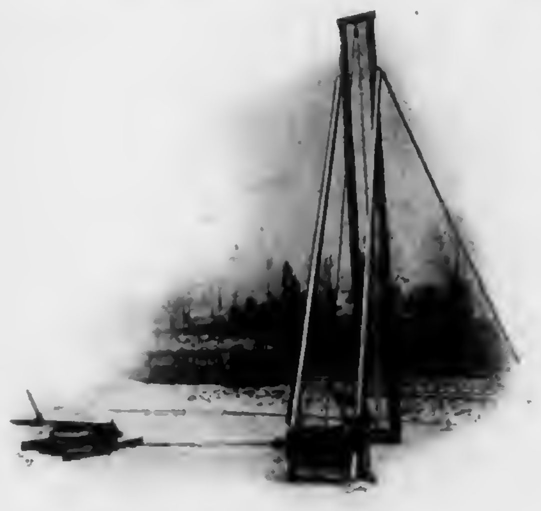
The world has made greater headway in getting acquainted with itself during the past five years than during the preceding quarter of a century. The nations have been coming together in a better knowledge of each other, and into a stronger sympathy through a dependence of each upon all others for something they need, out of which has developed a wonderful world-wide commerce.

Within the past twelve months a demand for ships has arisen which shipmasters have not been able to meet. The South African war service took over three hundred from their accustomed channels. The Chinese disturbance is requiring more. The ship-yards of the world are overcrowded, freights have advanced, warehouses along the Atlantic coast are crowded, awaiting ships, and European, Asiatic and South American countries are calling for our products, agricultural, manufactured, mining, our grains, breadstuffs, meats and fruits.

WELL-DIGGING MACHINERY.

A Large Field in Which to Work—An Industry that is Rapidly Growing.

The "old oaken bucket" may bring up recollections of the past, and the old well could many tales unfold if speech was in its possession, but there is another side to the old oaken bucket that has for centuries been constantly in view. Water and air are the most essential things in existence, and human life depends upon their purity.


Type of American Well-Digging Machine.

Man has looked to the rains to supply the rivers, creeks and rivulets, and to the wells for his source of pure water for domestic use. For centuries man has lived in blissful ignorance of the fact that the well from which he procured his supply of water was the breeding place of parasites and germs, that disease lurks in every vessel full of liquid taken from such exposed sources, and that he has all along been exposed to more dangers from his well than from all other causes combined.

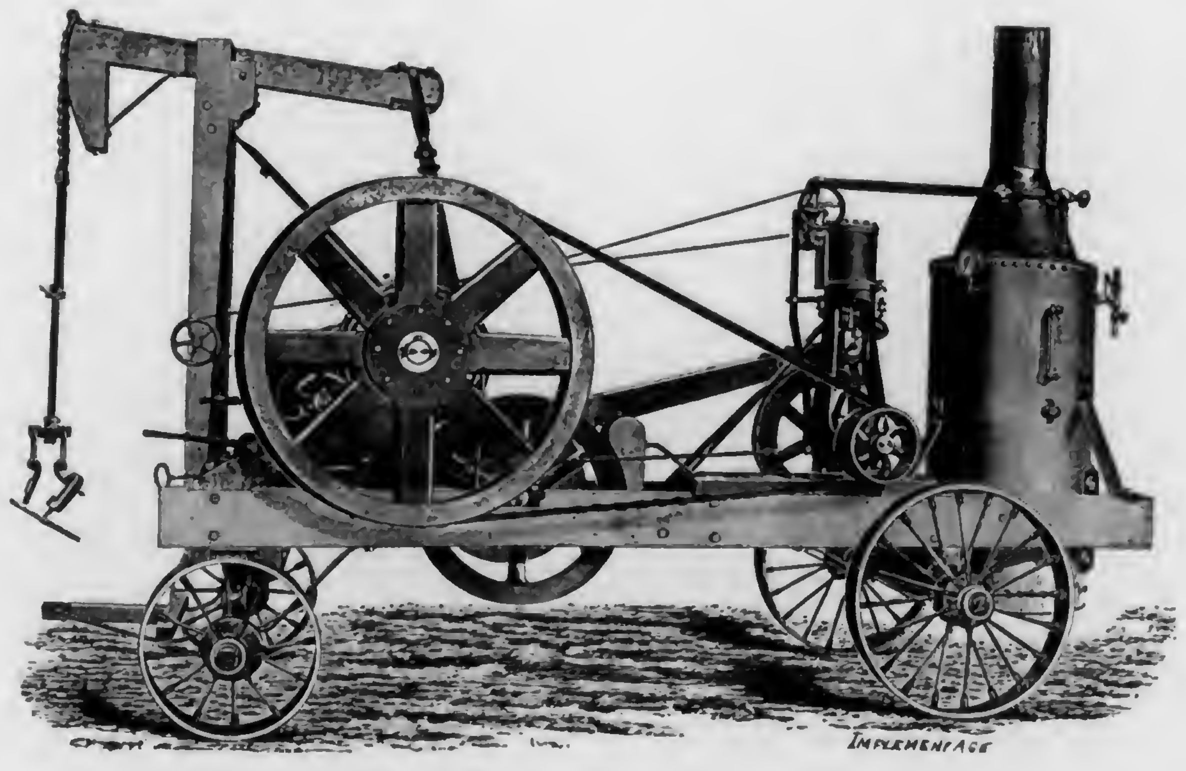
It requires but a glance over the past to make a comparison. The open-dug well is the receptacle of the filth of the farm. This is a bold assertion, yet the water of every farm is contaminated that is exposed to the air, dust, or plowings of the surface. Even when water sinks into the ground it still seeks its level, naturally gravitating to the well as an outlet.

Let one add some ground coffee grains to water, and also a small quantity of sugar or salt. Now filter the water, and it will pass through the filter apparently clear and pure. The coffee grounds will be arrested, because they are insoluble, but the salt or sugar will pass on with the water, and follow it wherever it goes. Soluble materials cannot be removed from water by filtration, and for that reason water from the well may appear as clear as crystal, yet be contaminated with decomposed animal matter, the soluble portions of decayed vegetation, and with the products of chemical changes that have occurred through the agency of heat, air, moisture, light and darkness.

It matters not where the well is located, or how carefully protected, if it is an open well it is subject more or less to surrounding circumstances, for there will be a flow of water in the soil in some direction, and gravity leads it to the large open well. The water from the clearest and purest spring may contain mineral matter in soluble form, and the running brooks receive the washings of the fields that have been manured with stable refuse from many sources. Pure water is one of the most difficult of all substances to procure, yet water is one of the ever-abundant substances existing on earth.

But man is progressive, and the inventor has come to the front to lengthen his life with pure water. Years ago it was not known that a pipe could be driven down into the earth and a plentiful supply of water procured for all purposes, in sufficient quantities for the largest factories, or even to supply towns and villages, yet to-day the improved well-drilling machinery, as now made, not only secures water from any depth, and in any quantity, but of a quality to be almost absolutely pure.

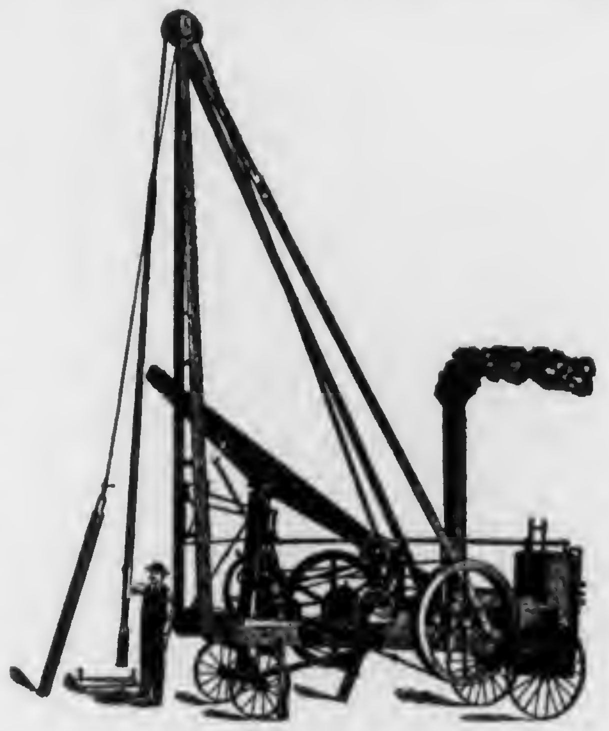
Water from a driven well requires no filtration. It is beyond the washings of the surface, the accumulations of insects, the dust, the microbes of the air, the germs of disease, or pollution from any source. The dug well (known as the open well) may fail, but the driven well never, because it is down below the influence of droughts or other obstacles. Its supply is never-failing, and the temperature of the water is the same every month in the year, cool in summer and not cold in winter.



Type of American Portable Well-Digging Machine.

The water down deep in the earth is that stored for the use of man, and has been for ages, but ignorance of nature's laws has caused the spread of diseases and epidemics, because man had not advanced to that stage of intelligence that permitted him to seek his water supply except in open wells or some polluted stream.

But to-day there are well-drilling machines and engines adapted for the best work, augers that rapidly bore, and as deep as desired, steel jars, bits, pipes, and all appliances for boring any kind of well, whether for water or petroleum, and they have been so highly improved as to render the cost of making a well a nominal one. The well-drilling machine stops at no obstacles, for it will go through sand or stone, and it requires no "divining rod" to guide it, as it finds water more surely than any indicator, and anywhere and everywhere that a well can be made.


Type of American Portable Well Digging Machine, in Operation.

There are hundreds of farmers and others who simply need a little education—a few facts—to be convinced of the advantages of the drilled well. They are ready, but there is no one to do the work. And it may be safely claimed that the drilling of wells opens a field for hundreds, because it is a branch of industry that is overlooked, as so few seem to be familiar with it, yet drilling wells is really a very simple process. It is true that there is something to learn, for the same may be said of a harvester or road machine, but not so difficult as to make the work of a kind requiring an expert. Everyone who has used the well-drilling machine has made the business pay, and if there is any pursuit where more profit on the capital invested can be secured than with well-drilling machinery, it is not easily discovered.

Only a bare portion of the world has been worked over to put down driven wells, yet thousands prefer them. In proof of this, notice the open-dug wells to be found everywhere, and which are never cleaned out. Visit any farm, and the farmer is behind the times in his pure water arrangements, yet talk with one of them and he is at once ready and anxious for pure water. People are learning the difference between soluble filth and that which is insoluble. The strainer and the filter cannot make the water pure. Once it is in the least contaminated the germs multiply rapidly, until the whole is impure. Pure water is not made; it is reached, and it must come from an uncontaminated source, deep down beyond the touch of germs and disease-breeding influences.

American well-drilling machinery has reached the highest degree of efficiency. For ease and rapidity of work, durability of the machines, and the great reduction in the expense of drilling a well, and also the low cost of the machinery, they cannot be surpassed. They have come to stay, and the old-time windlass, with its slimy bucket, is passing away, to be relegated among the things that were.

This is an age of progress, and with all the great strides that have been made no inventors have conferred greater benefit on mankind than those who have brought forth well-drilling machinery, for they not only cheapen the cost of wells and water, but add more years to man's life, and relieve him of many cares.

Type of American Portable Well-Drilling Machine.

LABORERS AND MACHINERY.

With the beginning of the introduction of machinery for the amelioration of the condition of the laboring classes on the farms of Great Britain and the United States, the laborers used every opportunity possible to prevent the land-owners from using the implements, and even resorted to violence, in some instances, to accomplish their purpose. These misguided people were induced to believe that human labor was being supplanted by machinery, and that starvation and ruin to them would be the natural result. For a long time much sympathy was extended them, as there is always a "fellow feeling" in the human heart, but inventors and manufacturers did not hesitate to push forward until gradually the field of operations was covered by them at every point.

It has not been so very long since a whole army of laborers would start up the country from Texas, in the United States, harvesting the wheat as it ripened, until they reached Minnesota. The differences of climate enabled them to secure a long period of employment, and as the farmers were often obliged to pay any price asked for labor, the cost of harvesting and marketing a crop of wheat was large, and influenced prices in the markets of the world. When the harvester entered the field it was broken to pieces, and it was with difficulty that they could be operated on a majority of farms. The laborers used the plea that the harvester was driving them to poverty.

What has been the result? Wages of farm laborers are now higher than are the wages of any other class of laboring men, and there is not a section of this country where the farmer does not find it difficult to secure sufficient help. While the introduction of farm implements may have lessened the demand for human labor in one direction it has opened the way for employment in others.

It is claimed that the number of persons employed in the manufacture and sale of farm implements and machinery alone is greater than the number of persons displaced on the farms. In other words, the use of farm implements has not only reduced the drudgery of farming, but it has transformed the laborer to be a skilled workman, giving him better wages, a more comfortable home, greater educational advantages for his children, and afforded him a larger share of the luxuries of life.

At the present day it would be an impossibility to harvest our enormous crops by hand labor alone, and the consequence would be that every workingman would be compelled to pay dearly for breadstuffs. The loss of any portion of this crop affects the interests of all classes of working people in many other respects. It means a loss to railroad employés, to those working in the flouring mills, grain elevators, bag factories, twine manufactories, and to stevedores, mariners, canal men, teamsters, and, in fact, there is a ramification to all points in the field of industry.

Type of American Well-Drilling Machinery.

Nothing has done so much to elevate the workingman, and place him on a higher plane than the use of labor-saving implements. The sewing machine, once fraught with supposed danger to the female operatives, has increased their wages, and its hum is now heard in every household. The typewriter that was to drive out an army of clerks and copyists, has simply called out the reserved corps of workers, and given others who were unemployed the opportunity to live more comfortably, and the benefit conferred on mankind by innumerable devices and novelties of a smaller kind cannot be estimated.

The working classes now recognize these facts. They may "strike" and resort to every possible method of securing higher wages, but they are no longer the enemies of machinery. They are more highly educated to-day, and need no instruction in regard to the blessings derived from the use of implements. Of all men the farmer has more cause to be grateful than others. He can accomplish now in a few hours what before required days or weeks, and he is also relieved of much anxiety and loss of time in anticipation of his work. Wherever farm implements or vehicles are found in general use there also will be observed greater prosperity, the church and the school-house will be prominent, while happiness and contentment will reign in the homes.

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Under no circumstances do we allow commissions to advertising agents.

The cottonseed crop of the United States is equal to that of wheat.

Do not overlook the fact that the larger the orders the lower the freight proportionately.

The American implements are sometimes imitated, but no one will ever want the imitation when they can get the genuine article.

The United States is now very close to Europe, so far as time is concerned. The large passenger steamships cover the distance is less than six days.

New York is the second largest city in the world, London being first and Paris third. Chicago and Philadelphia, in the United States, have each over 1,000,000 of people.

Dealers whose connections are in Asiatic markets should not overlook the fact that, as soon as it can be reached, a ship line will be established between Singapore and San Francisco, and also from Singapore to New York.

Our Argentine readers, most of whom are dealers, feel encouraged with recent developments in agriculture. Exporters to Argentina for the first week of October sent there binder twine worth $123,367 and of agricultural implements, upward of $100,000 worth.

The United States produces more coal and iron than she can use, although there are thousands of miles of railroads constructed every year. It is the cheap coal and iron that enables American manufacturers to sell to all countries, as natural advantages are in their favor.

In some portions of the United States there are at times short periods of dry weather, but the farmers have reservoirs which are kept full with the aid of windmills, from which the crops are given a supply of water as may be required. The windmill in the United States is used for a great many purposes.

Because a farmer has a large family of industrious boys is no reason why hand labor should be used when some little implement will perform the work of several persons. The cost of hand seed drills, wheel hoes, and other tools of like character, is almost insignificant compared with their real value.

American spades, shovels, forks, hoes and other small tools, are used in every country and they have always given satisfaction, as they are made of the best materials and to perform service. No country can excel the United States in quality, durability, and general adaptability of her forks, hoes, shovels, etc.

The best creamery machinery in the world is made in the United States. This fact is mentioned for the benefit of those of our readers in England who can reach the wholesale coöperative societies of Great Britain, under whose management creameries and butter factories are to be established on modern lines all over Ireland.

It is as natural for men of different countries to trade and exchange products as it is to grow crops. Trade between nations has occurred as far back as history records. When men carry their wares to other countries civilization advances and the world progresses. No country is blessed with all the advantages and when trade is heaviest the greater the wealth created.

Before laying in a stock of implements every merchant should endeavor to learn where he can buy to the best advantage. To do so he must write for circulars and catalogues. We do not disparage European implements but we believe it will be an advantage to every merchant to know all about American implements, as America is the greatest producer of agricultural products in the world.

South American merchants should have an advantage in selling implements made in the United States as more goods are purchased from South America by the United States than is supposed. In fact, the United States is the best customer the South American Republics have, and with the sales of more implements made in the United States other lines will follow, while South American products will be more diversified.

Our readers in Spain are assured that Americans fully appreciate the increasing volume of business coming from that kingdom. Every vessel leaving our ports for Spanish ports is loaded to its limit with freight, and our exporters and manufacturers are answering inquiries and quoting prices constantly. It requires only persistence on the part of our friends in Spain to build up a good trade in American implements.

"The Export Implement Age" goes to every country, and it is read in four languages. It therefore performs a valuable service in bringing merchants closer together. It is to the interest of all who are engaged in selling agricultural implements to know what is occuring outside of their territories. It matters not where a newspaper or trade journal may be published provided it benefits its readers and opens the roads to greater advantages.

When trade is restricted by tariffs there is protection to some classes and oppression to others. The farmer who buys his implements not only desires the best that can be had for the money but he also prefers to select for himself from among the many. No one has the right to condemn any government for making tariffs, as revenue must be obtained, but so far as agricultural implements are concerned they should be admitted free into every country on earth.

The butter makers of Australasia will find in American dairy appliances some devices which it will pay them to look into. American dairy interests have progressed in the perfecting of appliances from one detail to another, and they have now achieved a degree of success which warrants the attention of dairy interests anywhere. Australasian butter production has doubled within a short time, and there is still a larger market to fill. Some wise selections of appliances can be made in the United States.

The American National Association of Agricultural Implement and Vehicle Manufacturers held their annual meeting October 31st and November 1st and 2d. This association is composed of nearly all of the leading manufacturers, and at their annual meetings they discuss important matters connected with trade, including freights (both by railroad and water), laws relating to sales, credits, international affairs connected with the implement industry, foreign trade, contracts with dealers, etc. This association is not an organization in which the members have stock, or have invested capital, but is intended solely for the purposes of considering all matters connected with the implement and vehicle industry. It has accomplished much benefit, as the members are representatives of the largest factories and aim to place only the highest grade of goods on the market.

THE COST AND SERVICE.

If an implement costing a certain sum of money is introduced into a farming community, and the production is very largely increased, then the gain is really greater to the purchaser than to the manufacturer. For such reason every farmer should equip his farm with those appliances that will most easily permit him to make a profit, without regard to the country from which the goods may happen to come. In order to succeed, every farmer must consider his own interest, and every merchant who supplies the farmers must cast aside prejudice or favoritism and buy in the best markets. This is an indisputable fact in business which cannot be overlooked. American implements are used in every country and the orders are increasing every year.

THE FACTORY AND THE GOODS

The greatest responsibility the implement maker feels is to so make his implement that the possibility of its getting out of order is reduced to a minimum. In fact there is more thought given to this one point than to the building of the machine itself. The constant thought with the manufacturer is where is the latent possibility of weakness, what is likely to wear out, or what is liable to give way first, and to that possibility he directs his skill and knowledge. If the possibility is in the iron, he gets better iron if it is to be had; if in steel, he gets steel that tests better; if in the hardwood, he looks after its quality and its proper seasoning; he inquires from other buyers how his work has behaved; if any of his machinery does not do its work right he hauls it to the scrap heap and gets a better one; if it is due to a careless workman, he employs one who is better. If there is anything above another that the American implement manufacturer excels in it is pains-taking. He lets nothing go out that he is not satisfied with.

THE SAVING IN LABOR.

Our readers outside of Great Britain may be surprised to learn that crops in England have been neglected because of scarcity of farm labor. How far this could have been prevented by a larger supply of implements does not appear. An English implement journal remarks that in the majority of the counties improved machinery anl implements are neglected beyond possible justification, yet the same authority says it is universally admitted that work is done with greater ease and alacrity by machinery than by hand labor. Counties are mentioned where crops had to be neglected and left unharvested on account of difficulty of finding men. This is a strong argument in favor of having an abundance of machinery on hand. English farmers, while adopting mechanical methods on a large scale for heavy work, frequently rely upon hand labor for some of the lighter forms of work. The crop loss of even one season would pay for machinery to prevent it. The experience of the past five years has demonstrated effectually the value of and necessity for the best mechanical appliances in all industries, and farming benefits as much as any other by them.

THE PLOWS TO RECOMMEND.

The attention of our readers abroad is called to that peculiar feature of the American plow by which it effects a greater pulverization of the soil than may be aware of by many. Speaking generally, the value of plowing depends on two things—the depth and the degree of pulverization. Many farmers overlook pulverization and imagine that the greatest degree of upturning of the soil is all that is necessary. The theoretical point is to bring every particle of the soil in contact with the atmosphere and sunlight, in order that the air, moisture, heat and frost may act upon the constituent elements of the soil. Mere upturning of the soil in bulk does not do this. The early American plows did not do much more, but year by year the modifications introduced in position of point to the moldboard enabled the plow to separate the soil from itself, or as the Americans term it, pulverizing the soil. The American plow does this to perfection. Those plows which merely turn up the soil in lumps rob the farmer of his just dues and interferes with the appropriation of the fertility of the soil. If merchants abroad will keep this distinction in view they will have no difficulty in advising their patrons which kinds of plows to choose. There are in America over twelve hundred models of plows. Out of such a diversity, suited for all conditions and requirements of the soil, there should be no difficulty in securing suitable plows for all purposes.

EXPORTS AND IMPORTS.

The year 1900 will be commercially historic in the matter of the foreign trade of the United States. Enough is known now to be assured that this year's exportation of manufactures alone will about aggregate $500,000,000. The importation of manufacturers' materials will not exceed $300,000,000. The large balance in favor of the United States manufacturer is a record which is gratifying.

Up to the year 1893 the imports of manufactures had always exceeded the exports of the same, and both imports and exports were growing. It was in 1898 that exports of manufactures for the first time exceeded the imports of manufactures. It was then that more marked attention was called and given to the immensely increasing widespread export trade of the United States manufacturer.

These brief items relating only to one class of exports, that of manufactures, may suggest to the manufacturer reader some lines of action applicable to present needs in safely getting his foreign trade. The export trade has come like an avalanche in the night. This present business day's dawn has shown the mighty weight at our doors of that world around foreign trade. It must be taken care of promptly and rightly or its moving will greatly disturb if not destroy existing business conditions and methods.

While the figures and items mentioned show the enormous advance through recent years in our trade abroad, yet the future will no doubt be looked after diligently.

IMPLEMENTS THAT HAVE BEEN TESTED.

It frequently rests with the European dealer in implements to recommend some machine or implement. His word generally goes. His customers know him to be their frined and that he is honest and well informed. To these dealers we have a few words to say, not for to-day or next week, but for the future. The average farmer, when he comes to buy, can be more easily influenced to buy something like he had before, and which costs about the same or a little less. If he is asked to buy a different implement or machine he naturally hesitates and asks, "why change?" He sees German, American, French and English implements before him. It requires some persuasion and explanation, and also courage, on the part of the dealer or merchant to get his customer to understand that a light and strong implement, which can be used with one animal does as much work and as good work as the heavier implement with two animals.

The dealer has always a strong argument to rely upon, which is, that several million American farmers have been using the best implements for years, and that their endurance and value has been tested by hard usage year after year, and that the American wheat, maize, barley and other cereals, as well as American fruits, that are sold all over Europe, are cultivated by these improved implements, and that the high position which America has taken as an agricultural pioneer nation has been earned by the use of light and strong implements, and which have been proven abundantly strong by fifty years' use.

There is another thing to be considered, which is the opinions and recommendations of those who have bought and used American implements. It would be good business policy if each dealer would make it his business every season to procure the opinion of each of his customers who had used an American implement, stating what sort of work he did with it, how much work in a week or day, how much he saved, what the repairs were, if any, and what the total result was compared with other implements. These opinions, if circulated, would be beneficial to all interested.

AMERICA AND THE EAST.

People of other lands are sometimes mystified in reading the short, confusing dispatches from the United States relating to politics, business, railroads, etc. Events of the past two or three years have drawn all nations into closer harmony. The people of the world should know the people of the United States, not as they seem to be through cablegrams from New York City, the least Americanized city on the American continent, but as they are. There is a way open to know our people. It is through direct dealings, direct correspondence. A few weeks ago one thousand three hundred and fifty Cuban school teachers spent the summer months in an American city. They returned home by way of Philadelphia, stopping two days, and seeing and hearing much to broaden their minds. Each autumn several thousand merchants from the West, Southwest and South visit the great commercial centers of the northeastern section of the United States to see new goods, new styles, new displays, and to keep in touch with the spirit of progress. Some day, and the day is not so remote as might be imagined, the merchants of Mexico, Central and South America will visit the United States as merchants. They will travel from the coast to our great inland centers. They will visit our marts, our manufactories and our clearing houses, and will see and study our distinctly American features, and business men who are to-day selling implements in the countries to the south of us, in Europe and Africa, and even Asia, will some day stand beside the men who make these implements in their great factories, and will return feeling stronger to serve their countrymen at home after having come in touch with the mighty energies of this Western land. There will be fraternity. They will come to know us. We will learn from them, for they have much to teach us that we need to know.

The world is entering upon a new era, when brotherhood will be a fact instead of a sentiment, when men will mingle, from the steppes of Asia to the prairies of America. This will be made possible through ship building and cheap traveling. This intercourse, this development is as inevitable as it is necessary, and through it will come benefits that are beyond measure.

For several thousand years the star of empire and the path of civilization have been westward. Originating in the far East, they have made the rounds of the globe, culminating in a type of civilization in the United States, which, however refined, cannot be complete or completed until it has gone back, so to speak, over its course, and has gathered through commercial intercourse, the best fruits of all progress in all lands backward to the cradle of civilization.

This movement has now begun. It is full of portent. It means vastly more than the statesmen and scholars of the day imagine. Russia is expending $200,000,000 in redeeming Northern Asia, and making it habitable for her millions. Germany has $800,000,000 invested in foreign lands and is building a railroad from Constantinople to Bagdad, which opens up a region for ages lost to human energy. France is casting millions eastward and planting French civilization along the deserts. England, with her merchant princes and her men of brains and enterprise is pushing trade into the center of Africa and Asia, and now invites the world to the mightiest problem of all, viz.: the resuscitation of the oldest empire of man, the Chinese, and its opening up to the civilization of the Occident.

In short, the world is being made over, but the mighty instrument is not the sword, but the plowshare; not the rifle but the cultivator. It is industry, the tilling of the neglected soil, that is to work redemption. The world is hungry for peace. The nations are tired of blood. They prefer the dews of Heaven rather than the blood of their brothers to moisten the soil that is to bring them bread. The people are readier for the implements of peace than we know. The great backward tidal wave from our West to the far East will sweep war to one side and set the millions to tilling fields with aids to labor that have their origin in the fertile brain of the youngest nation and latest civilization for which a son of Spain, 400 years ago, opened the ocean gateway, and to which a son of Italy, Americus, gave his name.

America owes to Europe an immense debt of gratitude all these four centuries. For decades past her sturdy sons from the British Isles, from Germany, Poland, Hungary and Italy have poured in to do their share in humble capacities, helping America to build her railroads, mine her coal, plant her prairies and give her the means to help feed the world. America now comes with her thought transformed into machinery, implements and tools, and says to her toiling brothers of other lands: "Rise up, and live in greater comfort, and with less toil, and help us to carry on the grand work of progress until the whole world feels the good of our work and turn its thoughts to better things than war, and to the lifting of man onto a higher level of living, so that all can have an abundance to eat, homes of comfort, and live more in harmony with the inner thought which shines in any human being more or less brightly, be his home where it may."

Except for grinding flour for export from wheat, the farmer should have no use for the miller. Grain grinders, or feed mills, are now made in the United States, grind all kinds of grain fine and rapidly.

MILES OF WHEAT TRAINS.

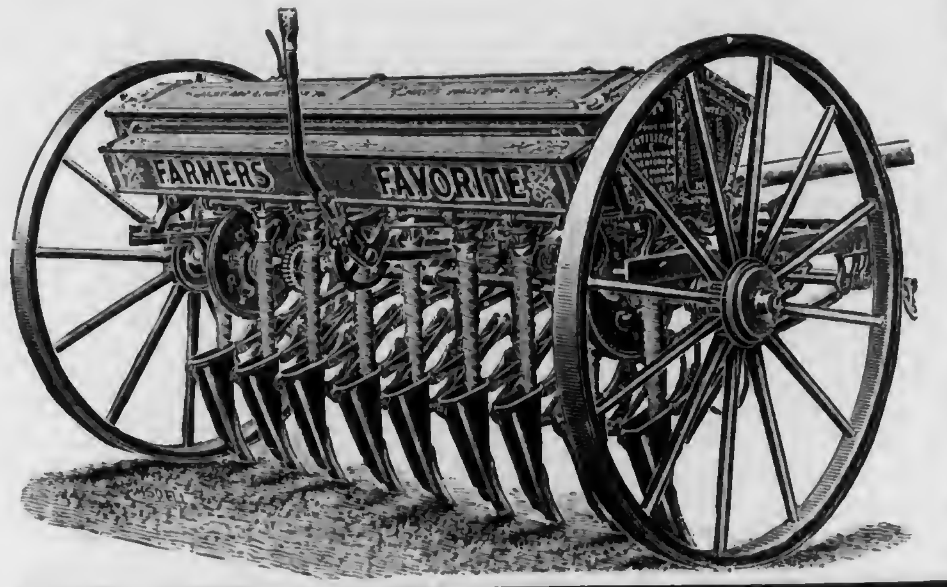
Trains carrying the 1900 wheat crop of Kansas, if distributed along the State lines, would form a Chinese wall extending nearly five-sixths of the distance around the State If Kansas had the Chinese idea of walling itself in, it could almost complete the work with cars of wheat of one year's crop. The trains would stretch a distance of a little over 985 miles, while the distance around the State is a trifle more than 1,200 miles. A solid train on the Santa Fe from Wichita to Galveston would not carry all the Kansas wheat, nor could trains carrying the total crop be stored on the main lines of both the Santa Fe and Burlington between Kansas City and Chicago. No Kansas City-Chicago road could store the wheat on its main line, all its side tracks and its yards.

It would require 5,205 trains of twenty-five cars each to carry the wheat of Kansas. These figures are based upon standard box cars of a length of thirty-three feet, inside measurement, or thirty-three feet eight inches outside, allowing two feet four inches for coupling, or thirty-six feet from coupling to coupling. Twenty-five cars would extend a distance of 900 feet, the engine drawing them would average seventy feet in length, and a caboose for trainmen would be thirty feet long, a total distance of 1,000 feet for each train.

It would take 6,326 of these trains to occupy standing, each touching another, to cover a distance equal to that of the four State lines of Kansas. A wall around Kansas, thus constructed, would have a thickness of nine feet ten and three-fourths inches and a height of thirteen feet eight and one-half inches, the standard width and height over all of thirty-three-foot cars.

The average of the cars now in the grain service exceeds thirty-three feet, many being as long as fifty feet, and the capacity exceeds that figured in this estimate, the board of trade having lately increased its estimate of average capacity, upon which the volume of wheat receipts are based, to 800 instead of 650 bushels. This increase in the estimated average was due to the heavier equipment now generally in use, but the old average of 650 bushels to a car was for an average capacity somewhat exceeding the standard. This standard is an old one, and 600 bushels to a standard car loaded at shipping stations in Kansas is not out of the way, while twenty-five cars to the average train may be rather too liberal an estimate.—Kansas City "Journal."

Russia will have large shipments to go to her principal ports from concerns in New York, California, Pennsylvania, Ohio, and Indiana. The orders include agricultural machinery, railroad equipments, machine tools, coal, dredges, pumps, mining machinery, traction engines, and wagons.



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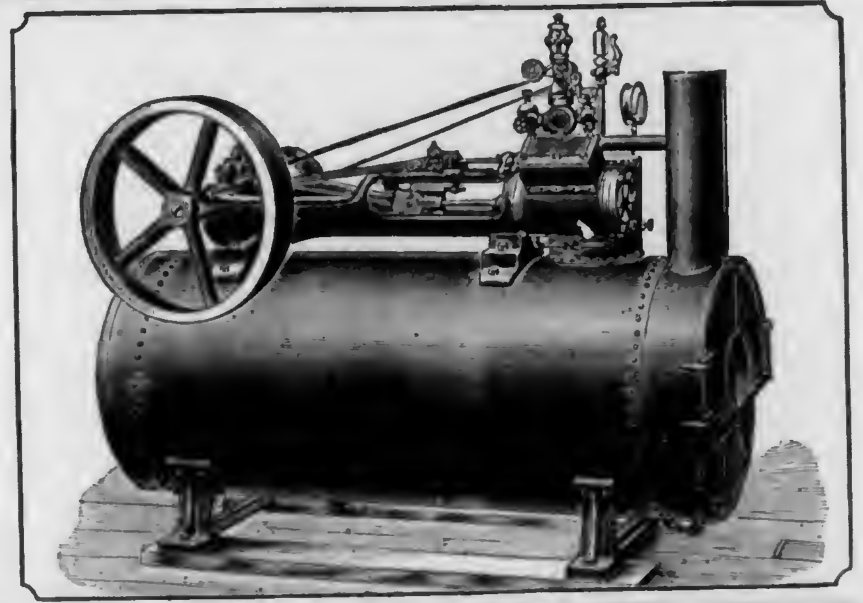

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TIGHT BINDING

INTERNATIONAL TRADE.

It is a fundamental truth that all progress is due to a conflict of forces. The universal conflict now in progress is between the old and the new. The desire for something better must come before the better thing. Need must come before desire, and a sense of poverty must come before need of better things can come. The sense of poverty is a divine inspiration where it exits in connection with capacity and energy.

The whole world looks to the United States for food and tools and culture, and the United States looks to all the world as a field for the development of its energies through trade. The outside world has its own old ways and methods. What it was that started America and Americans out from the lethargy of centuries into intellectual and mechanical and industrial and moral, as well as spiritual activity, with a vigor and zeal that enabled them in a little over a century to become the beacon light of the world is a theme for philosophers and economists and thinkers. What we have to do with to-day are facts, results, achievements, new conditions, new and mighty capabilities, and a God-like valor in effort in all of the great pathways of intellectual and moral progress that stamps the American people as the giants of the New Time—the forerunners of the newer and higher civilization.

The American people instinctively feel that they have a mighty world-work to do, and to that divine appointed task they are manfully addressing themselves with the same earnestness and clearness of vision that led the Pilgrim fathers across the Atlantic; which led the colonists to fight the greatest government of the world for seven years, and which led the fathers of the present generation to die on battlefields, that the finishing stroke of republican institutions on the American continent might be done as Washington would have done it.

To-day the American people find themselves in the possession of the heirlooms of the ages. They are rich on resources, powerful in effort, strong of arm and vigorous of brain. They find the great body of humanity out of step, clinging to the hoe instead of the cultivator, to the hand scythe instead of the harvester, to the unaided muscle instead of to the power of applied thought. They ask the world to come with them to adopt the easier tool, to gather the greater sheaf from morn to eve, to use what they use, to work as they work, to cast over the enslaving implements that generation after generation has clung to and made them slaves of habit.

Will they do it? Even in our sister Mexican Republic, where incentive and opportunity are thrown at all, there is surprising apathy in getting away from old tilling methods, as implement travelers unwillingly testify. Progress is there, but when the native Mexican is asked to demonstrate it in himself he hugs his old implements with a determination that is disheartening and discouraging.

In European countries conditions are different. American implements are found from the Atlantic to the Steppes of Russia, sprinkled everywhere in appreciative hands. Even old England, with its progressiveness, is obliged to use our better implements in many lines. Further, Europeans in their defensive tactics against our competition in fruit products have to admit that our methods and our tools must possess merit, else how could we enter their markets and force them into protective measures against them.

The great struggle has only begun. It is not a struggle of America against Europe, of Standard oil against Russian oil, of Kansas beef against German beef, of California fruit against Italian fruit, or of Carnegie steel against Krupp steel, but it is a struggle for that which is of good quality and merit.

There is but one outcome. The spirit of progress rules. Humanity has caught the inspiration of progress, and there can be no turning back. All lands are becoming as but one land, all people one brotherhood, in the inspiration and aspiration to realize the glorious conception that fires the hearts of Americans and Europeans alike.

The old methods must give way, not by a crash, but under the sweet beneficence of the spirit of universal progress Europe is learning from America and America is learning from Europe. In mechanism, in mechanical arts, in making the mysterious forces of nature serve us, we endeavor to lead.

There is no escape. Science is lighting the world; industry is civilizing the human tendencies; commerce is spreading its benefits, and our ships are the agents of the spread of the fruits of our development. While we imagine we are seeking dollars, the kindly hand that holds the destinies of nations in its palm, smiles and looks beyond into the great future into which human endeavor, through selfish motives perhaps, is forcing its way.

The results of our efforts in shop and field and laboratory must be shared with all the world. Our implements must and will find their way all through the valleys and hills and mountain sides of Europe, even to farther India. The force that will carry our tools, our implements, our machinery, our fruits and meats, and our devices to utilize power, are as bound to find their way throughout the world as the desires of man are bound to reach out for the thing that will better his condition.

Europe is a market for our goods as well as for hers, and there is but one escape, and that is to welcome our effort, adopt what we have evolved, and use the means which we have discovered and which will add to the basket and store of every man and every home that accepts what we have to offer.

A PERMANENT DISPLAY.

European purchasers of and dealers in American implements, tools and machinery, will find their work year by year made easier. The establishment of sample warehouses abroad has done some good, and their enlargement and establishment in new commercial and industrial centers will do much to familiarize and popularize the European users and consumers with what America has that they want. But this building of centers for display is not to be done abroad only. The enterprising people of Chicago, Illinois, have taken measures to erect an immense building at a cost of $2,000,000, to be called a "Palace of Industries," which, besides affording room for the exhibition of every variety of mechanical device, in which implements will occupy a prominent place, there will be room for 20,000 people.

Chicago represents largely the great agricultural interests of the Northwestern section of the United States—the wheat granary of the world. Europe can safely look to Chicago for a display of everything necessary to the most profitable cultivation of the soil.

Double Tube Lightning Insect Exterminator and Sprayer
with Detachable Glass Reservoir.

A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy, and it does save time.

Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.

It is light, but well made; is cheap; and repairs, if needed, obtained in the smallest village.

Packed in cases of one dozen for foreign trade.

Circulars and prices free upon application.

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Fly-Killer Oil.

Protects Cows and Horses from torture by flies.

IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.

It is entirely harmless, and does not injure the coat of either cows or horses, and **it will keep flies from stock during the summer months.**

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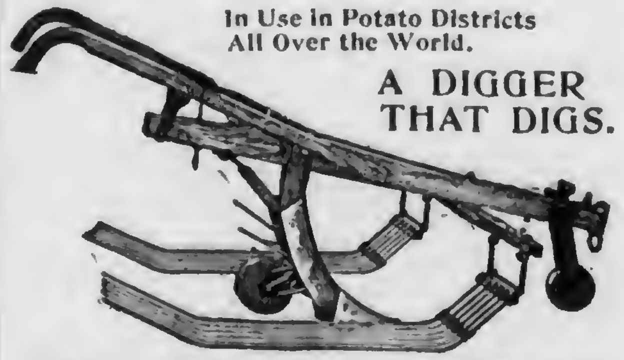

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New York ist die zweitgrösste Stadt der Welt, während London die erste und Paris die dritte Stelle einnimmt. Chicago und Philadelphia besitzen je über eine Million Einwohner.

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Wenn ein Landwirt auch eine Anzahl fleissiger Söhne besitzt, so ist dies noch kein Grund zur ausschliesslichen Anwendung von Handarbeit, da selbst ein kleines Gerät die Arbeit mehrerer Personen leisten kann. Der Preis von Säemaschinen für Handbetrieb, Radhauen und anderen Werkzeugen ähnlicher Natur ist, im Vergleich mit deren praktischen Wert, ganz unbedeutend.

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Jeder Händler sollte sich bestreben, ausfindig zu machen, wo er am vorteilhaftesten einkaufen kann, bevor er ein Lager von Geräten und Maschinen anlegt; er sollte sich daher Circulare und Kataloge kommen lassen. Ohne die europäischen Geräte und Maschinen herabsetzen zu wollen, glauben wir, dass es sich jedem Händler empfehlen würde, eine genaue Kenntnis amerikanischer Geräte und Maschinen zu erwerben, da Amerika gegenwärtig der grösste Produzent der setze, Kreditfragen, internationale Angelegen-

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Wenn der Handel durch Schutztarife beschränkt wird, so geschieht dies zum Schutze gewisser Produkte und zur Unterdrückung anderer. Der Landwirt, der Geräte kauft, will für sein Geld nicht nur das Beste haben, sondern auch unter den vielen verschiedenen Artikeln persönlich seine Wahl treffen. Niemand hat das Recht, eine Regierung zu tadeln, weil sie Schutzzölle einführt, da der Staat ein Einkommen haben muss; aber was landwirtschaftliche Geräte und Maschinen anbelangt, so sollten dieselben in allen Ländern der Welt zollfrei sein.

Amerikanische Spaten, Schaufeln, Gabeln, Hauen und andere Werkzeuge kleinen Schlages werden in allen Ländern benützt und geben überall höchste Befriedigung, da sie aus bestem Material und lediglich mit Rücksicht auf hohe Arbeitsleistung angefertigt sind. Kein Land kann die Vereinigten Staaten von Nord-Amerika in Qualität, Dauerhaftigkeit und allgemeinem Gebrauchswert ihrer Gabeln, Hauen, Schaufeln u. s. w. übertreffen.

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Es ist für die Einwohner verschiedener Länder ebenso natürlich, ihre Produkte zu verkaufen und auszutauschen als ihre Felder zu bebauen. Handelsbeziehungen zwischen verschiedenen Völkern sind so alt wie die Weltgeschichte. Sowie der Mensch seine Waaren nach anderen Ländern bringt, nimmt die Civilisation zu und die Welt schreitet fort. Keines von allen Ländern geniesst alle Vorzüge, und je mehr sich der Handel erweitert, desto grössere Werte werden geschaffen.

Die Vereinigten Staaten von Nord-Amerika sind eine der ersten Nationen der Welt. Vor hundert Jahren betrug ihre Bevölkerung nur 5,000,000, heute beläuft sie sich auf 75,000,000. Sie sind auch wahrscheinlich das reichste Land der Welt. Die hohe Bedeutung der Vereinigten Staaten von Nord-Amerika ist dem Landbau zuzuschreiben, und die landwirtschaftlichen Geräte und Maschinen sind es, die Amerika in den Stand setzen, enorme Ernten zu erzielen und die ganze Welt mit Brot zu versehen. Diese Geräte und Maschinen sind schnell vervollkommnet worden und befinden sich jetzt in einem Stadium höchster Vollendung.

Wenn ein Gerät, das eine gewisse Summe kostet, in einer Land-Gemeinde eingeführt wird, und sich der Bodenertrag dadurch bedeutend erhöht, so ist der Gewinn des Käufers thatsächlich ein grösserer, als der des Fabrikanten. Aus diesem Grunde sollte jeder Landwirt sein Gut mit denjenigen Apparaten versehen, die am leichtesten einen Nutzen ermöglichen, ohne sich darum zu kümmern, aus welchem Lande dieselben stammen. Um erfolgreich zu sein, muss jeder Landwirt sein eigenes Interesse wahrnehmen, und jeder Händler, der an Landwirte liefert, muss Vorurteile oder Rücksichten fallen lassen und auf den besten Märkten einkaufen. Es ist dies eine unleugbare Thatsache, die im Geschäftsleben nicht zu übersehen ist. Amerikanische Geräte werden in jedem Lande der Welt verwendet, und die Aufträge für dieselben nehmen mit jedem Jahre stark zu.

Der Händler oder Landwirt, der glaubt, für ausländische Waaren kein Geld ausgeben zu dürfen, ist in seinen Anschauungen nicht liberal. Wenn ein Europäer eine gewisse Summe für einen Pflug nach Amerika sendet, so erhält freilich ein Amerikaner das Geld, der Europäer erhält jedoch seinen Pflug dafür; im Ganzen genommen ist es eben nur ein Besitzwechsel. Der eine schenkt dem andern nichts, noch existirt irgend welche Verbindlichkeit bei diesem Geschäfte. Wenn Jemand einen Artikel zu besitzen wünscht, muss er irgend etwas dafür hergeben, ob dies nun in der Form von Geld oder Waare geschieht, bleibt sich im Grunde gleich. Wünscht z. B. ein Amerikaner ein Fass Wein in Frankreich zu kaufen, und der Besitzer des Weines braucht einen Pflug, so könnten beide Parteien leicht den Wein und den Pflug gegenseitig austauschen; und wenn nun der Eine den Wein kauft und den Pflug verkauft, während der Andere den Pflug kauft und den Wein verkauft, wobei jeder dem anderen Geld zukommen lässt, so würde sich das Geschäft nicht besser gestalten, als wenn nur ein einfacher Austausch der Produkte stattfände. Wenn ein Land einem anderen Lande Geld schickt, verschenkt es dasselbe nicht, sondern erhält dafür den gleichen Gegenwert zurück.

INTERNATIONAL TRADE.

It is a fundamental truth that all progress is due to a conflict of forces. The universal conflict now in progress is between the old and the new. The desire for something better must come before the better thing. Need must come before desire, and a sense of poverty must come before need of better things can come. The sense of poverty is a divine inspiration where it exits in connection with capacity and energy.

The whole world looks to the United States for food and tools and culture, and the United States looks to all the world as a field for the development of its energies through trade. The outside world has its own old ways and methods. What it was that started America and Americans out from the lethargy of centuries into intellectual and mechanical and industrial and moral, as well as spiritual activity, with a vigor and zeal that enabled them in a little over a century to become the beacon light of the world is a theme for philosophers and economists and thinkers. What we have to do with to-day are facts, results, achievements, new conditions, new and mighty capabilities, and a God-like valor in effort in all of the great pathways of intellectual and moral progress that stamps the American people as the giants of the New Time—the forerunners of the newer and higher civilization.

The American people instinctively feel that they have a mighty world-work to do, and to that divine appointed task they are manfully addressing themselves with the same earnestness and clearness of vision that led the Pilgrim fathers across the Atlantic; which led the colonists to fight the greatest government of the world for seven years, and which led the fathers of the present generation to die on battlefields, that the finishing stroke of republican institutions on the American continent might be done as Washington would have done it.

To-day the American people find themselves in the possession of the heirlooms of the ages. They are rich on resources, powerful in effort, strong of arm and vigorous of brain. They find the great body of humanity out of step, clinging to the hoe instead of the cultivator, to the hand scythe instead of the harvester, to the unaided muscle instead of to the power of applied thought. They ask the world to come with them to adopt the easier tool, to gather the greater sheaf from morn to eve, to use what they use, to work as they work, to cast over the enslaving implements that generation after generation has clung to and made them slaves of habit.

Will they do it? Even in our sister Mexican Republic, where incentive and opportunity are thrown at all, there is surprising apathy in getting away from old tilling methods, as implement travelers unwillingly testify. Progress is there, but when the native Mexican is asked to demonstrate it in himself he hugs his old implements with a determination that is disheartening and discouraging.

In European countries conditions are different. American implements are found from the Atlantic to the Steppes of Russia, sprinkled everywhere in appreciative hands. Even old England, with its progressiveness, is obliged to use our better implements in many lines. Further, Europeans in their defensive tactics against our competition in fruit products have to admit that our methods and our tools must possess merit, else how could we enter their markets and force them into protective measures against them.

The great struggle has only begun. It is not a struggle of America against Europe, of Standard oil against Russian oil, of Kansas beef against German beef, of California fruit against Italian fruit, or of Carnegie steel against Krupp steel, but it is a struggle for that which is of good quality and merit.

There is but one outcome. The spirit of progress rules. Humanity has caught the inspiration of progress, and there can be no turning back. All lands are becoming as but one land, all people one brotherhood, in the inspiration and aspiration to realize the glorious conception that fires the hearts of Americans and Europeans alike.

The old methods must give way, not by a crash, but under the sweet beneficence of the spirit of universal progress Europe is learning from America and America is learning from Europe. In mechanism, in mechanical arts, in making the mysterious forces of nature serve us, we endeavor to lead.

There is no escape. Science is lighting the world; industry is civilizing the human tendencies; commerce is spreading its benefits, and our ships are the agents of the spread of the fruits of our development. While we imagine we are seeking dollars, the kindly hand that holds the destinies of nations in its palm, smiles and looks beyond into the great future into which human endeavor, through selfish motives perhaps, is forcing its way.

The results of our efforts in shop and field and laboratory must be shared with all the world. Our implements must and will find their way all through the valleys and hills and mountain sides of Europe, even to farther India. The force that will carry our tools, our implements, our machinery, our fruits and meats, and our devices to utilize power, are as bound to find their way throughout the world as the desires of man are bound to reach out for the thing that will better his condition.

Europe is a market for our goods as well as for hers, and there is but one escape, and that is to welcome our effort, adopt what we have evolved, and use the means which we have discovered and which will add to the basket and store of every man and every home that accepts what we have to offer.

A PERMANENT DISPLAY.

European purchasers of and dealers in American implements, tools and machinery, will find their work year by year made easier. The establishment of sample warehouses abroad has done some good, and their enlargement and establishment in new commercial and industrial centers will do much to familiarize and popularize the European users and consumers with what America has that they want. But this building of centers for display is not to be done abroad only. The enterprising people of Chicago, Illinois, have taken measures to erect an immense building at a cost of $2,000,000, to be called a "Palace of Industries," which, besides affording room for the exhibition of every variety of mechanical device, in which implements will occupy a prominent place, there will be room for 20,000 people.

Chicago represents largely the great agricultural interests of the Northwestern section of the United States—the wheat granary of the world. Europe can safely look to Chicago for a display of everything necessary to the most profitable cultivation of the soil.

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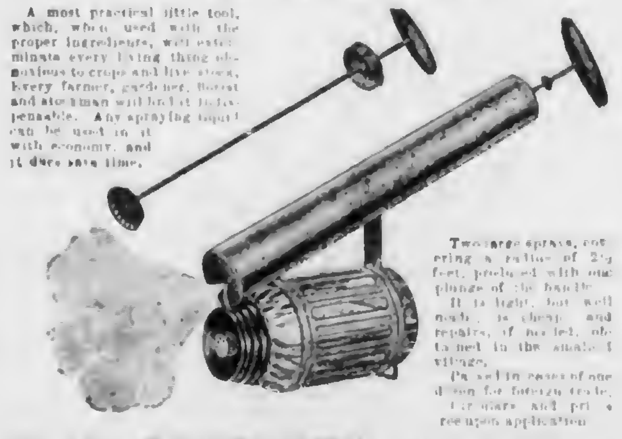

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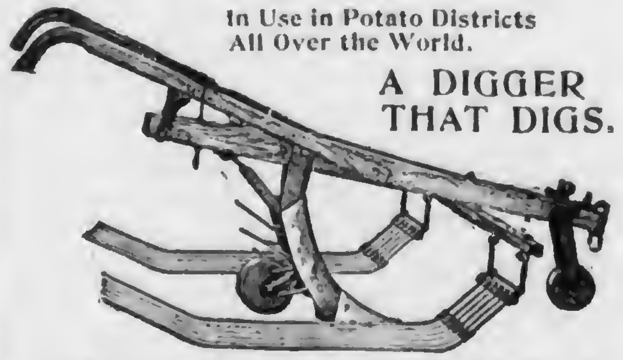

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Die Vereinigten Staaten von Nord-Amerika sind eine der ersten Nationen der Welt. Vor hundert Jahren betrug ihre Bevölkerung nur 5,000,000, heute beläuft sie sich auf 75,000,000. Sie sind auch wahrscheinlich das reichste Land der Welt. Die hohe Bedeutung der Vereinigten Staaten von Nord-Amerika ist dem Landbau zuzuschreiben, und die landwirtschaftlichen Geräte und Maschinen sind es, die Amerika in den Stand setzen, enorme Ernten zu erzielen und die ganze Welt mit Brot zu versehen. Diese Geräte und Maschinen sind schnell vervollkommnet worden und befinden sich jetzt in einem Stadium höchster Vollendung.

Wenn ein Gerät, das eine gewisse Summe kostet, in einer Land-Gemeinde eingeführt wird, und sich der Bodenertrag dadurch bedeutend erhöht, so ist der Gewinn des Käufers thatsächlich ein grösserer, als der des Fabrikanten. Aus diesem Grunde sollte jeder Landwirt sein Gut mit denjenigen Apparaten versehen, die am leichtesten einen Nutzen ermöglichen, ohne sich darum zu kümmern, aus welchem Lande dieselben stammen. Um erfolgreich zu sein, muss jeder Landwirt sein eigenes Interesse wahrnehmen, und jeder Händler, der an Landwirte liefert, muss Vorurteile oder Rücksichten fallen lassen und auf den besten Märkten einkaufen. Es ist dies eine unleugbare Thatsache, die im Geschäftsleben nicht zu übersehen ist. Amerikanische Geräte werden in jedem Lande der Welt verwendet, und die Aufträge für dieselben nehmen mit jedem Jahre stark zu.

Der Händler oder Landwirt, der glaubt, für ausländische Waaren kein Geld ausgeben zu dürfen, ist in seinen Anschauungen nicht liberal. Wenn ein Europäer eine gewisse Summe für einen Pflug nach Amerika sendet, so erhält freilich ein Amerikaner das Geld, der Europäer erhält jedoch seinen Pflug dafür; im Ganzen genommen ist es eben nur ein Besitzwechsel. Der eine schenkt dem andern nichts, noch existirt irgend welche Verbindlichkeit bei diesem Geschäfte. Wenn Jemand einen Artikel zu besitzen wünscht, muss er irgend etwas dafür hergeben, ob dies nun in der Form von Geld oder Waare geschieht, bleibt sich im Grunde gleich. Wünscht z. B. ein Amerikaner ein Fass Wein in Frankreich zu kaufen, und der Besitzer des Weines braucht einen Pflug, so könnten beide Parteien leicht den Wein und den Pflug gegenseitig austauschen; und wenn nun der Eine den Wein kauft und den Pflug verkauft, während der Andere den Pflug kauft und den Wein verkauft, wobei jeder dem anderen Geld zukommen lässt, so würde sich das Geschäft nicht besser gestalten, als wenn nur ein einfacher Austausch der Produkte stattfände. Wenn ein Land einem anderen Lande Geld schickt, verschenkt es dasselbe nicht, sondern erhält dafür den gleichen Gegenwert zurück.

INTENTIONAL SECOND EXPOSURE

GAS- UND GASOLIN-MOTOREN.

Ihr Wert für den Landwirt und die grosse Ersparnis an Betriebs- und anderen Kosten, die durch ihren Gebrauch erzielt werden.

Obgleich die Einfuhr von Gas- und Gasolin-Motoren in gewissen Ländern verboten ist, wird dennoch keinerlei Schutzmassregel je die Einfuhr eines Artikels zu hindern im Stande sein, der so ausserordentliche Vorzüge besitzt, dass er sich überall Ansehen erwirbt. In Europa stehen die Petroleum-Motoren schon seit langer Zeit in Gebrauch; die Amerikaner finden jedoch die Gas- und Gasolin-Motoren für ihre Zwecke besser geeignet, da sie verlässlich, sicher und stark sind, sich rasch in Bewegung setzen lassen und noch eine Reihe anderer vorzüglicher Eigenschaften besitzen. Da ihre Gebrauchsfähigkeit lediglich vom Gas oder Gasolin abhängt, sind sie in der That ein sehr bequemes Betriebsmittel. Dass die Gas- und Gasolin-Motoren die Beachtung aller Völker und Länder verdienen ist Thatsache, und die Ueberlegenheit der amerikanischen Industriellen in diesem Fache wird allgemein anerkannt.

Der Landwirt verliess sich seit Jahrhunderten auf Ochsen und Pferde als die Quellen seiner Betriebskraft und ist so sehr an die Ueberlieferungen und Gebräuche seiner Väter und Vorväter gewöhnt, dass er sich durchaus nicht zur Umschau nach ausserhalb seines Landgutes befindlichen Verbesserungen veranlasst sieht, die es ihm ermöglichen würden, weniger Vieh zu halten, grössere Betriebskraft anzuwenden und durch Herabsetzung seiner Betriebskosten und Verminderung schwerer Arbeit grössere Erträge zu erzielen.

Der Fabrikant betreibt sein Geschäft, im Gegensatz zum Landwirt, auf einer Basis sehr geringen Profits und ist daher gezwungen, seine Betriebskraft von Maschinen oder anderen Quellen zu beziehen, die Dauerhaftigkeit, Wirksamkeit und Sicherheit mit möglichst compakter Form verbinden. Pferde und Ochsen könnten unter solchen Umständen nicht gnügen. Der Industrielle ist durch den Druck der Umstände genötigt, von seinen Betriebskräften den allersparsamsten Gebrauch zu machen; der Landwirt hingegen ist nicht genötigt, seine Betriebskräfte mit Rücksicht auf möglichste Billigkeit zu verwenden und zahlt daher sehr teuer für das, was dem Industriellen zu einem Minimalpreis zur Verfügung steht.

Die Betriebskraft der Gegenwart wird aus Feuerungsmaterial gewonnen, und sogar die Landwirtschaft bedient sich mancher Geräte und Maschinen, die das Pferd verdrängen. So ist erst jüngsthin eine automatische Mähmaschine auf den Markt gekommen, die Gras mäht; die Automobilen (sowohl für leichten als auch schweren Transport) sind bereits wohlbekannt, und automatische Pflüge, Cultivatoren, Eggen u. s. w. befinden sich gegenwärtig im Experimentirungsstadium. In einigen Jahren wird das Wort "automatisch" überflüssig geworden sein, das es sich durch den allgemeinen Gebrauch solcher Maschinen von selbst verstehen wird. Das Pferd hat seinen Dienst auf der Strassenbahn bereits quittirt; die Transportsgesellschaften schaffen es ebenfalls ab, und auf grossen Landgütern verwendet man es heutzutage mehr zum Reiten als zum Zuge.

Der Landwirt zahlt immer noch den höchsten Preis für Betriebskraft. Er muss für Pferde und andere Haustiere grosse Gebäude haben und kann seine Tiere nur zu gewissen Zeiten und zu Spezialzwecken verwenden. Er verliert ausserdem noch drei bis vier Jahre dadurch, dass er warten muss, bis die Tiere die Arbeit überhaupt leisten können und erhält für diesen Zeitverlust, den er bei der Kostenberechnung der in späteren Jahren von den Tieren gewonnenen Betriebskraft nicht in Anschlag bringt, keinerlei Entschädigung.

Der Landwirt ist aber nicht der einzige Gewerbetreibende, für den die Gas- und Gasolin-Motoren von Wichtigkeit sind, da dieselben in Dorf und Stadt sogar noch mehr Verwendung finden als auf Landgütern. Einer der grössten Vorteile der Gasolin-Motoren liegt in ihrem Gebrauch als Beihilfe zu Dampfmaschinen. Amerikanische Gas- und Gasolin-Motoren entwickeln die grösstmögliche Anzahl von Pferdekräften im Verhältnis zu ihrer Grösse und Räumlichkeit und werden im Verein mit der Dampfkraft da benutzt, wo rasche Feuerung oder schnelle Arbeit notwendig sind. Sollte es z. B. nicht ratsam sein, einen Dampfkessel rasch anzuheizen, so wendet man den Gasolin-Motor an; und es giebt Fabriken, die Gasolin-Motoren einzig und allein zu diesem Zwecke benützen, da sie fast augenblicklich angehen, und wenn sie nicht arbeiten, keine Kosten verursachen. Es soll hier nicht behauptet werden, dass Gasolin-Motoren die Dampfkraft je verdrängen oder ersetzen könnten — denn die Dampfmaschine ist heutzutage so wichtig wie je — wohl aber, dass ein Gasolin-Motor da am Platze ist, wo Dampfkraft nicht leicht erhältlich, und dass sie der Dampfmaschine dadurch ein weiteres Feld eröffnet, dass sie Ersparnisse in jenen Perioden der Ruhe ermöglicht, die nur geringe Betriebskraft erheischen. Sie nimmt eine ganz besondere Stellung ein, beeinträchtigt die Erlangung von Betriebskraft anderen Ursprungs in keiner Weise und bildet oft eine billige Betriebskraft für alle diejenigen, die sonst nicht im Stande wären, sich eine solche zu verschaffen.

Die Gasolin-Motoren werden auf Wunsch aufrecht oder horizontal geliefert. Bei ihnen giebt es keinen Maschinisten, keinen Heizer, keine Steinkohlen, keinen Rauch, keine Asche, keine Abfälle, keine Verschwendung von Heizmaterial und keine Angst vor Explosionen. Die modernen Motoren sind so vervollkommnet, dass der Regulator der Maschine die Geschwindigkeit sowohl, wie auch den Verbrauch an Heizstoff automatisch regelt.

In Fabriken mag es bequemer sein, Gas zu verwenden; der Landwirt zieht demselben jedoch das Gasolin vor. Manchmal "feuert" man die Maschine einfach mit einem Streichholz; man kann sie auch durch einfaches Umkippen oder eine Umdrehung des Schwungrades in Bewegung setzen. Eine besondere Bedienung ist nicht nötig, da die Maschine nach dem Prinzip der Sicherheit gebaut ist und sich von selbst regulirt. Die Fabrikanten von Gasolin-Motoren wissen gar wohl, dass ihre Maschinen unverkäuflich wären, wenn ihre Sicherheit, Dauerhaftigkeit und Arbeitsleistung etwas zu wünschen übrig liessen; sie kennen die Anforderungen des Landwirts und sind gezwungen, sich nach denselben zu richten, wenn sie nicht ihre Fabriken binnen kurzer Frist schliessen wollen. Der Landwirt, der sich einen Gasolin-Motor anschafft, kann sich darauf verlassen, dass derselbe geprüft worden ist und garantirt wird; er kann aber kein Pferd kaufen, von dem er mit Sicherheit behaupten könne, dass es absolut tüchtig und im Stande sein wird, die gestellten Erwartungen zu erfüllen.

Zur Bewässerung der Felder oder zur Beschaffung von Wasser für andere Zwecke wird der Gasolin-Motor in jedem Staate der Union verwendet. Er ist in manchen Gegenden zur Beischaffung von Wasser unentbehrlich, da er im Vergleich mit anderen Krafterzeugungsvorrichtungen verlässlicher und billiger arbeitet; auch wird er hierzulande in Städten zum Beischaffen des Wassers benutzt.

Der Gasolin-Motor ist leicht transportirbar und kann überall auf dem Felde oder an jedem beliebigen Orte aufgestellt werden. Er wird hierzu nur auf einen Wagen oder auf Räder gesetzt und ist zur Arbeit fertig. Er wird sowohl stationär als transportabel geliefert und ist so leicht, dass er ohne Mühe überallhin gebracht und zur Lieferung der nötigen Betriebskraft in nächster Nähe verwendet werden kann. In dieser Hinsicht steht er unerreicht da.

Es ist nicht unsere Absicht, die Gasolin-Motoren hier eingehend zu beschreiben, da jeder Händler oder Landwirt sich nur an einen Fabrikanten zu wenden braucht, um sofort illustrirte, genaue Kataloge aller Bestandteile derselben zu erhalten. Wir sind jedoch der Ansicht, dass Wiederverkäufer trachten sollten, mehr Gasolin-Motoren einzuführen, da die hierdurch dem Landwirte gebotene Ersparnis ein Vorteil ist, von welchem sowohl Letzterer als auch der Wiederverkäufer selbst Nutzen zieht. Der Gasolin-Motor hat sich schnell eingebürgert und findet seinen Weg nun auch auf jedes Landgut.

Amerika hat in den ersten Jahren seines wunderbaren landwirtschaftlichen Aufschwunges den grossen Wert der Windräder rasch erkannt, und bald fanden sich scharfsinnige Köpfe, die den Wind ins Joch spannten. Die modernen Windräder sind absolut vollkommen, und Tausende von amerikanischen Landwirte würden sich ohne die stets zur Arbeit bereiten Windräder in trostloser Lage befinden. Für viele europäische Landwirte sowohl, als auch für die Viehzüchter Süd-Amerikas und anderer Länder wäre es von grossem Vorteile, Windräder zu verwenden. Der Unterschied zwischen den verschiedenen Systemen dieser Räder sollte allen Denen, die Windräder anzukaufen gedenken, geläufig sein. Die Dienstleistungen, zu welchen dieselben verwandt werden können, sind geradezu zahllos. Die Literatur der Vereinigten Staaten von Nord-Amerika über die Windräder ist unterhaltend und lehrreich. Agenten im Auslande, die in dieser Industriezweige Handelsverbindungen anzubahnen und zu entwickeln in der Lage sind stehen alle Einzelheiten gern zur Verfügung.

MASCHINEN ZUM BRUNNENBOHREN.

Ein grosses Arbeitsfeld und eine rasch anwachsende Industrie.

Der "Eimer aus bemoostem Eichenholz" bringt uns Erinnerungen aus alter Zeit, und der romantische, alte Ziehbrunnen könnte so manche alte Mär erzählen, wenn er die Gabe der Sprache besässe; aber wie alle Dinge, so hat auch der alte Eimer, der Jahrhunderte hindurch zu stiller Betrachtung aufgefordert, seine Kehrseite. Wasser und Luft sind die wichtigsten Faktoren im Leben, und unser Leben ist wesentlich auf ihre Reinheit angewiesen.

Der Mensch betrachtete den Regen als den Ursprung der Ströme, Flüsse und Bäche, und den Brunnen als den Spender klaren Wassers für den häuslichen Bedarf. Jahrhunderte hindurch lebte er in glücklicher Unkenntniss des Umstandes, dass der Brunnen, von dem er seinen Wasservorrat bezog eine wahre Brutstätte von Parasiten und Bacillen war, dass in jedem Eimer Wasser, das von solchen, Wind und Wetter schutzlos offenstehenden Quellen stammt, Siechtum auf seine Opfer lauert, und dass er all' die lange Zeit über durch seinen Brunnen mehr Gefahren ausgesetzt gewesen ist, als durch alle möglichen anderen Ursachen zusammengenommen.

Es bedarf nur eines Blicks auf die Vergangenheit, um Vergleiche zu ziehen. Der offene, ausgegrabene Brunnen ist der Sammelplatz alles auf dem Wirtschaftshof aufgehäuften Unrats. Es mag diese Behauptung etwas kühn erscheinen, doch alles Wasser, das der Luft, dem Staub, oder dem Zulaufe der oberflächlichen Bodenflüssigkeiten offensteht, ist notwendigerweise unrein. Sogar wenn das Wasser in den Boden einsickert, muss es sein natürliches Niveau zu erreichen trachten, und gravitirt so auf natürlichem Wege nach dem Brunnen als Ausflussort.

Man schütte nur etwas Kaffeesatz und eine geringe Menge von Zucker oder Salz in reines Wasser und filtrire es alsdann, und es wird den Filtrirapparat anscheinend klar und rein verlassen. Der Kaffeesatz bleibt als unlöslich zurück, aber Satz oder Zucker laufen mit dem Wasser durch und verbleiben in ihm, wohin es auch immer gelangen mag. Lösliche Stoffe werden durch einfaches Filtriren nicht aus dem Wasser entfernt, und aus diesem Grunde mag Brunnenwasser krystallklar erscheinen, und dennoch durch verweste Stoffe tierischen Ursprungs, lösliche Bestandteile zersetzter Vegetation und Produkte chemischen Stoffweschsels verunreinigt sein, die durch Hitze, Luft, Feuchtigkeit, Lichtstrahlen oder Dunkelheit ins Dasein gerufen wurden.

Es macht wenig Unterschied, wo der Brunnen sich befindet, und wie er auch von Wind und Wetter geschützt sein mag; ist er ein ausgegrabener Brunnen, so hängt er mehr oder weniger von dem Zustande seiner Umgebung ab, denn innerhalb des Bodens befindet sich stets Wasser, das in einer gewissen Richtung fliesst und durch seine eigene Schwerkraft nach dem grossen, offenen Brunnen gedrängt wird. Wasser von der klarsten und reinsten Quelle mag mineralische Bestandteile in löslicher Form enthalten, und die rinnenden Bäche empfangen die Auslaugung der Felder, die mit Stallmist und mannigfaltigen Abfällen gedüngt sind. Reines Wasser ist eine nur äusserst schwierig erhältliche Substanz, und dennoch ist das Wasser jederzeit und überall der am häufigsten vorkommende Bestandteil unserer Erde.

Der Mensch ist dem Fortschritte ergeben, und sein Erfindungsgeist macht es ihm möglich, sein Dasein durch reines Wasser zu verlängern. In früheren Jahren wusste man nicht, dass durch eine in den Boden getriebene Röhre ein reicher Wasservorrat für alle Zwecke, in genügender Menge für den Betrieb der grössten Fabriken, ja für den Bedarf von Dorf und Stadt, zu beschaffen sei; gegenwärtig aber bringt man Wasser mit Hilfe der modernen fortgeschrittenen Brunnentechnik und ihrer vorgüglichen Maschinen aus beliebiger Tiefe, in beliebiger Menge und von fast absoluter Reinheit auf die Erdoberfläche.

Das Wasser von artesischen Brunnen bedarf keiner Filter. Es befindet sich ausserhalb des Bereiches der Auslaugung der Erdoberfläche, der Abfälle der Insektenwelt, des Staubes, der Mikroben der Luft, der Seuchenbacillen oder anderer Verunreinigungen aller Art. Der gegrabene Brunnen (auch als "offener Brunnen" bekannt) versagt zuweilen den Dienst, der gebohrte Brunnen jedoch nie, da er tief hinab reicht, wo er dem Einflusse der Dürre und anderer schädlicher Ursachen entrückt ist. Sein Zufluss giebt nie aus, und die Temperatur des Wassers ist die gleiche das ganze Jahr hindurch: kühl im Sommer und nicht kalt im Winter.

Das in der Tiefe des Erdballs aufgestaute Wasser ist für den Gebrauch des Menschen bestimmt, und zwar seit langen Jahrhunderten; nur die Unkenntnis der Naturgesetze verursachte den Ausbruch von Seuchen und Epidemien, bevor der Mensch jenen Grad von Verständnis erreichte, der ihn in den Stand setzte, seinen Wasservorrat anderswo zu suchen, als in offenen, gegrabenen Brunnen oder verseuchten Flüssen.

Heutzutage giebt es aber Brunnenbohrmaschinen, die an Leistungsfähigkeit nichts zu wünschen übrig lassen; rasch arbeitende Hohlbohrer, die beliebig tief eindringen, stählerne Brunnenkörper, Schmalbohrer für kurze Strecken, Wasserröhren, und alle Apparate zum Bohren von Brunnen, ob diese nun Wasser, Petroleum oder irgend welche andere Substanz zu Tage fördern. Sämmtliche Werkzeuge und Maschinen besitzen einen Grad der Vollkommenheit, der die Kosten der Brunnenbohrung kaum nennenswert erscheinen lässt. Die Brunnenbohrmaschine kennt keine Hindernisse, durchdringt Sand und Stein, und benötigt keine "Wünschelruthe" zum Auffinden der Wasserader, da sie das Wasser weit sicherer zu finden weiss, als es derartige Ueberbleibsel alten Aberglaubens thun können; und überall, wo das Bohren eines Brunnens überhaupt möglich ist, führt sie es auch durch.

Hunderte von Landwirten und anderen Gewerbetreibenden brauchen nichts weiter, als ein wenig Belehrung und eine Einweihung in gewisse nähere Umstände, um von den Vorteilen des Brunnenbohrens überzeugt zu werden. Sie sind auch hierzu bereit, haben aber Niemanden, der das Unternehmen durchführen könnte. Man kann mit Sicherheit annehmen, dass das Bohren artesischer Brunnen Hunderten von Menschen ein Feld der Thätigkeit eröffnen würde, da dieser Industriezweig bisher sehr vernachlässigt worden ist, und es nur Wenige giebt, die mit derselben vertraut sind, obschon das Bohren von Brunnen an und für sich ein höchst einfaches Verfahren ist. Natürlich giebt es aber auch hierin etwas zu lernen, wie ja auch bei den Ernte- und Strassenbaumaschinen, doch ist die Erlernung des Verfahrens bei Weitem nicht so komplizirt, um die Heranbildung von Sachverständigen nötig zu machen. Wer eine Brunnenbohrmaschine besitzt, findet auch ihre Verwendung ein lohnendes Geschäft, und man könnte schwerlich ein Gewerbe finden, wo ein angelegtes Kapital sich besser verzinst, als eine Brunnenbohrgarnitur.

Bisher ist nur ein verschwindend kleiner Teil der Erdoberfläche mit gebohrten Brunnen versehen, und ihre Freunde zählen bereits nach Tausenden. Als Beweis des Gesagten dienen die offenen, gegrabenen Brunnen, die noch überall häufig vorkommen und niemals gereinigt werden. Besucht man ein Landgut, so findet man häufig, dass seine Wasserversorgung in ihrer Reinheit den Anschauungen der Jetztzeit nicht mehr entspricht, bespricht man die Angelegenheit aber mit seinem Besitzer, so findet man ihn sofort bereit, ja begierig, reines, klares Wasser einzuführen. Die Leute beginnen den Unterschied zwischen löslichem und unlöslichem Unflat einzusehen. Siebe und Filtrirapparate können das Wasser aber nicht vollkommen reinigen; sobald es auch noch so unbedeutende, unreine Bestandteile aufgelöst enthält, vermehren sich die Keime rasch, bis der ganze Wasservorrat vergiftet ist. Reines Wasser kann nicht fabrizirt, wohl aber gefunden werden und muss von einer völlig unberührten Quelle kommen, die sich in grosser Tiefe, fern von schädlichen Keimen und seuchenerzeugenden Einflüssen befindet.

Die amerikanischen Brunnenbohrapparate haben den höchsten Grad der Vollkommenheit erreicht. An Leichtigkeit und Raschheit der geleisteten Arbeit, Dauerhaftigkeit der Maschinenteile und bedeutender Herabsetzung der Bohrungskosten sowohl, als auch des Kostenpreises der Maschinen selbst, werden sie nirgends übertroffen. Sie bedeuten einen grossen Fortschritt, und der Ziehbrunnen der alten Zeit mit dem von grünem Schleim überzogenen Eimer verschwindet vor ihnen Schritt für Schritt und dürfte bald zu jenen Dingen gezählt werden, die der Vergangenheit angehören.

Die Jetzzeit ist ein Zeitalter des Fortschritts, und unter den grossen Errungenschaften derselben giebt es keine Erfindung, die der Menschheit grössere Wohlthaten erweist, als die des Brunnenbohrens, die nicht nur Brunnen und Wasser wohlfeiler macht, sondern auch das menschliche Leben um Jahre verlängert und von vielen Sorgen befreit.

Das "Export Implement Age" findet sich in jedem Lande und wird in vier Sprachen gedruckt. Es leistet seinen Lesern wertvolle Dienste, da es nähere Verbindungen zwischen den Interessenten anbahnt. Es liegt im Interesse aller derer, die sich mit dem Verkauf landwirtschaftlicher Geräte und Maschinen befassen, zu wissen, was sich ausserhalb ihres örtlichen Bereiches ereignet. Wo eine Zeitung oder ein Handelsblatt erscheint, ist gleichgiltig, wenn es nur den Vorteil seiner Leser im Auge hat und diesen den Weg zur Ausbreitung ihres geschäftlichen Wirkungskreises ebnet.

DAS GEHEIMNIS EINER GUTEN ERNTE.

In keinem Lande der Welt wird der Landbau wissenschaftlicher betrieben als in den Vereinigten Staaten von Nord-Amerika. Die in diesem Lande so zahlreichen, ausgedehnten Tafelländer und mächtigen Ebenen und die ungeheuren Länderstrecken, die einzelnen Grundbesitzern gehören, machen die Abschaffung aller die Handarbeit begünstigenden Methoden und den fast ausschliesslichen Gebrauch von Maschinen zur Notwendigkeit. Der Landwirt der grossen Agrikulturstaaten pflügt, sät und erntet mit Maschinen, und ein halbes Dutzend Arbeiter weist auf diese Weise eine Arbeitsleistung auf, deren Verrichtung durch Menschenhände Hunderte beschäftigen würde.

Sorgfältige und eingehende Aufmerksamkeit widmet man dem Anbau des Samens, da sich jeder Landwirt des Umstandes bewusst ist, dass er einer Fehlernte entgegensieht, wenn Anbau und Pflanzung nicht in der richtigen Weise vor sich gehen. Dieses Pflanzen oder Anbauen von Samen auf grossen Feldern ist, wenn es mit der Hand ausgeführt wird, eine langsame, mühselige Arbeit und im Breitwurf niemals zufriedenstellend, da es unmöglich ist, bei dieser Methode Grassamen oder Getreide gleichmässig anzubauen, so dass die Pflanzen an manchen Stellen nur dünn, an anderen hingegen so dicht wachsen, dass ihr Wachstum erstickt oder aufgehalten wird. Um die besten Ernteresultate zu erlangen, muss der Samen auf der gesammten Oberfläche absolut gleichmässig gestreut werden. Zur Erreichung dieses Resultats werden Maschinen zum Anbau verwendet, und eine der besten von diesen, die ungemein praktisch für den Landwirt ist, ist die hier abgebildete breitwürfige "Cahoon" Säemaschine. Die Fabrikanten derselben garantiren, dass diese Maschine nicht nur fünfmal mehr leistet als durch Handanbau erzielt werden kann, sondern auch mindestens ein Drittel weniger Samen benötigt. Da letzterer auf der ganzen Fläche gleichmässig verteilt wird, ist die Ernte eine weit ergiebigere, wie auch von besserer Qualität als mittelst anderer Anbaumethoden möglich wäre.

Die Säemaschine wird über die Schultern gehängt, an der Vorderseite des Körpers getragen und ist in dieser Stellung bequem zu handhaben. Der Samen wird in den Behälter geschüttet, und der Abfluss des Samens nach dem Fächer mittelst eines kleinen Schiebers entsprechend regulirt. Durch Umdrehung des grossen Zahnrades mittelst der Kurbel wird die rasche Rotation des Fächers bewirkt, der den Samen gleichmässig über einen weiten Raum verteilt. Die Maschine sät Weizen oder Roggen in einer Breite von dreissig Fuss und andere Samen je nach deren Gewicht. Es wird garantirt, dass diese Maschine in zehn Stunden fünfzig Acker Weizen, fünfunddreissig Acker Hafer oder dreissig Acker Grassamen mit Leichtigkeit und aufs Allervollkommenste ansät und die bestmögliche Ernte zusichert. Ihre Bauart ist äusserst einfach und Jedermann kann sich ihrer bedienen. Die "Cahoon" Säemaschine hat auf den verschiedenen Ausstellungen mehr erste Preise als irgend eine andere ähnliche Maschine davongetragen, und wo sie erst einmal by Landwirten im Gebrauche steht, macht sie sich rasch beliebt. Die Maschine hat jüngsthin wieder den ersten Preis (silberne Medaille) und ein Ehrendiplom auf der Nationalen Export-Ausstellung in Philadelphia davongetragen.

Sie wird von der Firma Goodell Company, No. 10 Warren street, New York, deren Fabrik sich in Antrim, N. H., befindet, angefertigt und kann in allen Teilen der Erde von Gerätehändlern bezogen werden.

Der der Herstellung von Pflügen gewidmete Industriezweig ist in den Vereinigten Staaten von Nord-Amerika zu gigantischen Proportionen angewachsen. Wenn ein Pflug auch nur ein Pflug ist, so bestehen doch vielfache Unterschiede, die eine beiläufige Kenntnis der hervorragendsten Pflugbauarten des Weltmarkts wünschenswert erscheinen lassen, und die hierzu nötige Auskunft findet sich im Annoncenteile unseres Blattes. Der Ruf amerikanischer Pflüge in fremden Ländern ist ein wohlverdienter und dauernder. Es giebt keine Anforderung, die der ausländische Markt stellen könnte, und die nicht ebenso eingehende Berücksichtigung fände, als die Anforderungen der heimischen, amerikanischen Landwirte. Die Einrichtung der amerikanischen Fabriken ist eine ganz vorzügliche, und die gründliche Erfahrung der amerikanischen Industriellen erstreckt sich auf alle nur möglichen vorkommenden Fälle. Wir sind bereit. europäischen Agenten nach besten Kräften an die Hand zu gehen und sie mit den amerikanischen Pflügen, einschliesslich der mehrscharigen, vertraut zu machen.

Die amerikanische National-Gesellschaft von Fabrikanten landwirtschaftlicher Geräte und Wagen hielt ihre Jahresversammlung am 31. Oktober und am 1. und 2. November ab. Dieser Verein umfasst nahezu alle hervorragenden Industriellen dieser Branche, und auf den jährlichen Versammlungen desselben werden wichtige handelspolitische Maassregeln besprochen, welche die Frachtsätze zu Wasser und zu Lande, Handelsgesetze, Kreditfragen, internationale Angelegenheiten, Geräte-Industrie, Export und Import, Geschäftskontrakte u. s. w. betreffen. Die Gesellschaft ist kein Aktienunternehmen, sondern allein der Erledigung aller die Geräte- und Wagen-Industrie betreffenden Maassnahmen gewidmet. Sie hat viel Gutes gestiftet, da ihre Mitglieder sich aus den bedeutendsten Fabrikanten zusammensetzen und nur Waaren ersten Ranges auf den Markt bringen.

Der Geldwert der in den ersten sieben Monaten des Jahres 1900 von Amerika ausgeführten landwirtschaftlichen Geräte und Maschinen stellt sich auf 13,135,119 Dollar, für dieselbe Periode des Vorjahres dagegen auf nur 10,508,720 Dollar; sie bildet den grössten Posten auf der Liste der fertigen Fabrikationsprodukte. Der Geldwert der anderweitigen, verschiedenartigen Maschinen übertrifft obige Summe um ein Geringes, aber die eigentliche Landwirtschaftsmaschinen-Industrie, steht an der Spitze aller anderen Industrien Die Ausfuhr von Kupfer und raffinirten Oelen steht natürlich weit obenan Die hervorragende Stellung, die die Geräteindustrie im Exporthandel einnimmt, ist höchts zufriedenstellend.

THE DEMING PUMPS.

Die Firma The Deming Company, Salem. Ohio (Ver. Staaten von Nord-Amerika), deren Inserat sich an anderer Stelle in diesem Blatte befindet besitzt eine der vollständigsten Fabriksanlagen der Vereinigten Staaten oder irgend eines anderen Landes zur Anfertigung von Eisen- und Messingpumpen für Hand- und Maschinenbetrieb, hydraulischen Rammklötzen, Brunnenbestandteilen, Eisen- und Messingcylindern u. s. w Die Fabrik nimmt mehrere Acker ein, und das ihr eigentümliche Verfahren wird so systematisch durchgeführt, dass das fertige Produkt die Werkstätte in einem Grade der Vollendung verlässt, der, was Modell, Material und mechanische Arbeit anbetrifft, das Höchste in seiner Art darstellt. Diese Vollendung in Modellirung, Material und Konstruktion rechtfertigt den Namen des Fabriksproduktes: "Deming Pumpe, die beste der Welt.'

Unsere Abbildung zeigt eine Ansicht der Fabriksanlage der Deming Company und giebt zugleich eine Idee von der bequemen Einrichtung derselben für Fabrikation und Versendung. Zwei Eisenbahnlinien befinden sich in unmittelbarer Nähe, mit direkten Weichen für die verschiedenen Abteilungen der Gewerke.

In dieser Fabrik werden Hunderte von verschiedenen Pumpen und Pumpenteilen nach zahlreichen Modellen gefertigt. Man produzirt hier Cisternen-, Brunnen- und Maschinpumpen, Windmühlpumpen für Bewässerungs- und allgemeine Zwecke; sowohl Hand- als auch Maschinpumpen zum Gebrauch in Haus und Fabrik; Göppelpumpen zur Bewässerung; Göppel- und Dampfpumpen für tiefe Brunnen; Triplex Maschinpumpen für Wasserwerke, Dampfkessel und allgemeine Wasserzufuhr; Triplex Minenpumpen mit elektrischem Betrieb; Triplex Pumpen mit Gasolinbetrieb für die Zufuhr von Wasser zu Locomotiven; rotirende Pumpen für verschiedene Zwecke; Triplex Pumpen für hydraulische Pressen; Maschinpumpen für tiefe Brunnen mit schwerem oder leichtem Hub und Metallcylinder für dieselben; Kielwasser- und Deckpumpen zum Gebrauch auf Schiffen; Compressions- und Vacuumpumpen für Hand- und Maschinenbetrieb; hydraulische Mauerbrecher verschiedener Grössen und neuer Arten für Bewässerung, häuslichen Gebrauch und Zuleitung von Wasser zu Fabriken; Pumpen für Bleigiesser, Maurer und Feuerwehr, wie auch Sprühpumpen, Mundstücke und Apparate zum Schutz der Bäume gegen Verwüstung durch schädliche Insecten. Die Deming Pumpen stehen in allen Teilen der Welt im Gebrauche.

Der neueste, vollständige, reich illustrirte Katalog No. 20 dieser Fabrik, der 272 Seiten stark ist, ist am 1. Oktober herausgekommen. Wir machen hier auf die in der Oktobernummer des "Export Implement Age" erschienene Ankündigung desselben, sowie auf das betreffende Inserat, das eine ganze Seite einnimmt und Proben des Kataloges enthält, besonders aufmerksam. Dieser Katalog steht allen Importeuren von Eisenwaaren und Maschinen auf gefällige Anfrage portofrei zu Diensten.

EXPORT IMPLEMENT AGE

POUR LA CIRCULATION À L'ÉTRANGER EXCLUSIVEMENT.

Journal indépendant, dévoué exclusivement au intérêts du commerce d'exportation de machines d'agriculture, pompes, moulins à vent, outils de fermes et de crêmerie accessoires.

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Il ne faut pas perdre de vue plus les commandes sont importantes moins le fret est élevé, proportionnellement.

Les États-Unis sont aujourd'hui très près de l'Europe, au point de vue du temps nécessaire pour le voyage. Les grands paquebots font la traversée en moins de six jours.

On imite quelquefois les instruments agricoles américains, mais personne ne voudra jamais avoir l'imitation quand on peut se procurer l'article véritable.

Parmi les plus grandes villes du monde, New-York occupe le deuxième rang, Londres le premier et Paris le troisième. Chicago et Philadelphie, aux États-Unis, comptent chacune plus de 1,000,000 d'habitants.

Dans quelques parties des États-Unis, il y a par moments de courtes périodes de sécheresse, mais les fermiers ont des réservoirs qui sont tenus toujours pleins à l'aide de moulins à vent et d'où l'on tire l'eau pour humecter les récoltes suivant les besoins. Le moulin à vent est employé aux États-Unis pour beaucoup de travaux différents.

Les États-Unis produisent plus de charbon et de fer qu'ils ne peuvent en user, bien qu'on y construise chaque année des milliers de milles de chemins de fer. C'est le bas prix du charbon et du fer qui permet aux fabricants américains de vendre à tous les pays, car les avantages naturels sont en leur faveur.

Les fermiers américains préfèrent labourer le sol avec la charrue, et dans quelques cas on emploie la charrue fouilleuse, de façon à désagréger les couches inférieures de la terre, ce qui permet au terrain d'absorber et de retenir une plus grande quantité d'humidité. La culture des récoltes se fait avec la sarcleuse, la herse et la binette, et, dans tous les cas, les instruments sont établis de façon à accomplir la plus grande somme possible de travail avec la moindre dépense possible en force motrice.

Les bêches, les pelles, les fourches, les houes et autres petits outils américains sont employés dans tous les pays, et ils ont toujours satisfait ceux qui s'en servent, parce qu'ils sont fabriqués avec les meilleures matières et en vue du service à faire. Aucun pays ne peut l'emporter sur les États-Unis au point de vue de la qualité, de la durabilité et de la commodité en général de leurs fourches, houes, pelles, etc.

Il est aussi naturel pour les hommes des différents pays de commercer et d'échanger des produits que de faire pousser des récoltes. Le commerce entre nations s'est fait à une époque aussi reculée que remonte l'histoire. Lorsque les hommes transportent leurs marchandises dans d'autres pays, la civilisation avance et le monde progresse. Il n'est pas de pays qui jouisse de tous les avantages, et plus le commerce est important, plus la richesse créée est grande.

"L'Implement Export Age" va dans tous les pays et s'imprime en quatre langues. Par conséquent, il rend un précieux service en rapprochant les négociants les uns des autres. Il est de l'intérêt de tous ceux qui s'occupent de la vente des instruments agricoles de savoir ce qui se passe en dehors de leurs territoires. Peu importe l'endroit où se publie un journal commercial, pourvu qu'il profite à ses lecteurs et ouvre la voie au développement des intérêts.

Parce qu'un fermier a un grand nombre de fils travailleurs, ce n'est pas une raison pour employer le travail manuel, quand un petit outillage agricole peut faire la besogne de plusieurs personnes. Le prix de semoirs à main, de houes à roue et d'autres outils du même genre est presque insignifiant en comparaison de leur valeur véritable.

Les États-Unis sont devenus une des principales nations du monde. Leur population, il y a cent ans, n'était que de 5,000,000 d'habitants; elle est aujourd. hui de 75,000,000. On prétend que c'est le pays le plus riche de la terre. La grandeur des États-Unis leur vient de l'agriculture, mais c'est les instruments agricoles qui ont permis à l'Amérique de faire d'importantes récoltes et d'approvisionner le monde de produits alimentaires, ces instruments ayant été rapidement perfectionnés et rendus parfaits.

L'Association Nationale Américaine des Fabricants d'Instruments et de Véhicules Agricoles a tenu sa réunion annuelle le 31 octobre et le 1er et le 2 novembre. Cette Association se compose de presque tous les principaux fabricants; à ses réunions annuelles elle discute des questions importantes se rattachant au commerce, y compris le fret (par chemin de fer et par eau), aux lois concernant les ventes, aux crédits, aux affaires internationales affectant l'industrie, les instruments agricoles, le commerce avec l'étranger, les contrats avec les marchands, etc. Cette Association n'est pas une société dans laquelle les membres sont actionnaires ou ont placé des capitaux: elle n'a d'autre objet que l'étude de toutes les questions se rattachant à l'industrie des instruments et des véhicules agricoles. Elle a rendu de grands services, car ses membres représentent les plus importantes fabriques, et ils visent à ne placer sur le marché que des marchandises de toute première qualité.

Avant de se procurer un stock d'instruments agricoles, chaque marchand devrait s'efforcer de savoir où il peut acheter dans les conditions les plus avantageuses. Pour cela, il lui faut demander par lettre des circulaires et des catalogues. Nous ne voulons pas dénigrer les instruments agricoles européens, mais nous croyons qu'il sera avantageux pour tous les marchands de se renseigner à fond sur les instruments américains, car, de tous les pays du monde, l'Amérique est le plus grand producteur de produits agricoles.

Lorsque le commerce est restreint par des tarifs douaniers, certaines classes sont protégées et d'autres sont opprimées. Le fermier qui achète ses instruments agricoles ne désire pas seulement avoir ce qu'il y a de mieux pour son argent, mais il préfère aussi choisir lui-même dans le nombre. Personne n'a le droit de blâmer un gouvernement d'établir des tarifs douaniers, car il faut qu'un État ait des revenus, mais en ce qui concerne les instruments agricoles, ils devraient être admis en franchise dans tous les pays de la terre.

Si un instrument coûtant une certaine somme est introduit dans une exploitation agricole et que la production en soit considérablement augmentée, alors le profit est en réalité plus grand pour l'acheteur que pour le fabricant. Pour cette raison, chaque fermier devrait munir sa ferme de l'outillage qui lui permettra le plus aisément de réaliser des bénéfices, sans s'inquiéter du pays d'où peuvent venir les articles. Pour réussir, chaque fermier ne doit regarder que son intérêt, et chaque marchand qui fournit les fermiers doit mettre de côté les préjugés ou le favoritisme et acheter sur les meilleurs marchés. C'est là, en affaires, un fait indiscutable et qu'il ne faut pas perdre de vue. On fait usage dans tous les pays des instruments agricoles américains, et les commandes augmentent tous les ans.

Le négocient ou le fermier qui est d'avis qu'il ne doit pas envoyer d'argent à l'étranger pour avoir des marchandises n'a pas des vues libérales. Si l'européen envoie une certaine somme d'argent à un américain pour avoir une charrue, il est vrai que l'américain aura l'argent, mais c'est l'européen qui aura la charrue. Ce n'est, après tout, qu'un simple échange. L'un ne donne rien à l'autre, et il n'y a à tenir compte d'aucune obligation dans la transaction. Lorsqu'un homme désire un article, il donne quelque chose en échange, sous forme d'argent ou de marchandise. Si un américain désirait acheter une barrique de vin en France, et que le propriétaire du vin désirait une charrue, les deux parties pourraient facilement échanger la charrue et le vin, et si celui qui vend son vin et achète la charrue, et l'autre qui vend sa charrue et achète le vin se remettaient l'un à l'autre de l'argent, la transaction ne serait pas meilleure que s'il y avait eu échange des produits. Lorsqu'un pays envoie de l'argent à un autre pays, cet argent n'est pas perdu, mais quelque chose d'une valeur équivalente est renvoyé en échange.

MOTEURS À GAZ ET À GAZOLINE.

Leur valeur à la ferme et la grande économie en force motrice et autres depenses résultant de leur emploi.

Bien que l'importation des moteurs à gaz et à gazoline soit interdite, dans quelques pays il n'est cependant pas de barrières qui empêcheront jamais l'introduction d'un article quelconque ayant un mérite suffisant pour s'imposer à l'examen. En Europe, le moteur à pétrole est employé depuis longtemps ; mais les américains ont reconnu que le moteur à gaz et à gazoline remplissait mieux leur but, étant digne de confiance, rapidement mis en train, sûr, puissant, et possédant beaucoup de points recommandables. Quand on n'a à compter que sur le gaz ou à recourir à la gazoline, c'est un avantage à apprécier. C'est un fait acquis que le moteur à gaz et à gazoline mérite l'examen des gens de tous les pays, et il est admis que les fabricants américains excellent dans la construction de cet appareil.

Pendant des siècles, le fermier n'a eu d'autres sources de force motrice que le cheval et le bœuf, et il est tellement habitué aux traditions et aux coutumes de ses pères qu'il ne met aucun empressement à chercher en dehors de la ferme ce qui lui permettra de garder moins d'animaux, d'employer une plus grande force motrice et de réaliser plus de bénéfices par suite de la réduction des dépenses et de la diminution de la peine que donne le travail.

A l'encontre du fermier, le fabricant fait les affaires sur une base de bénéfices limités, et il est obligé d'avoir recours à la force motrice venant de machines ou de quelque autre source qui réunit la compacité, la durabilité, l'efficacite et la certitude. Le cheval et le bœuf ne pourraient pas être utilisés pour l'objet qu'il se propose. Il a été poussé à la connaissance de l'emploi économique de la force motrice par la nécessité des circonstances. Le fermier, ne se trouvant pas dans la nécessité immédiate d'employer la force motrice sous sa forme la plus économique, a payé cher ce que le fabricant obtient à un coût minimum.

La force motrice de l'époque actuelle est tirée du combustible. Même la ferme a été envahie par des instruments et des machines qui ont remplacé le cheval. On a récemment fait connaître l'auto-faucheuse, qui fauche le foin ; l'automobile (aussi bien comme voiture légère que comme chariot) est bien connue; et l'auto-charrue, l'auto-binette, l'auto-herse, etc., sont en cours d'experimentation. Dans quelques années, le mot "auto" sera superflu, car la machine sera d'un usage très répandu. Le cheval a disparu du service des tramways urbains, les compagnies de messageries le bannissent, et dans les grandes fermes il est employé plutôt pour la selle que sous le harnais.

Le fermier est encore celui qui paie le prix le plus élevé pour la force motrice. Il lui faut avoir de vastes bâtiments pour ses chevaux et ses autres bestiaux, et il ne peut se servir des animaux qu'à certaines périodes et pour des objets spéciaux. Il lui faut aussi perdre trois ou quatre années avant de pouvoir se servir des jeunes animaux, et leur entretien pendant ce temps-là il ne le compte pas dans le coût du travail qu'ils lui fournissent plus tard.

Mais ce n'est pas le fermier seul que cela intéresse, car les moteurs à gaz et à gazoline sont encore plus employés dans les villages, les communes et les villes que dans les fermes. Un des principaux avantages des moteurs à gazoline, est qu'on peut les employer comme auxiliaires pour les machines à vapeur. Proportionnellement à leur dimension et à la place qu'ils occupent, les moteurs américains à gaz et à gazoline développent la plus grande force motrice possible, et on les emploie concurremment avec la force de vapeur lorsqu'il est nécessaire de chauffer rapidement ou de faire un travail temporaire. Par exemple, lorsqu'on ne juge pas à propos d'allumer le feu sous la chaudière d'une machine à vapeur, on à recours au moteur à gazoline, et quelques fabriques emploient des moteurs à gazoline avec des machines à vapeur dans ce seul but, car leur mise en marche est presque immédiate et ils n'entrainent pas de dépense quand ils ne fonctionnent pas. Il n'y à pas à en conclure que le moteur à gazoline puisse remplacer l'emploi de la vapeur, car la machine à vapeur est aussi essentielle aujourd'hui que dans les temps passés, mais le moteur à gazoline comble une lacune lorsqu'il n'est pas facile d'obtenir de la force de vapeur, et il augmente la vente des machines à vapeur parce qu'il permet à ceux qui s'en servent de réduire les dépenses pendant les périodes de calme ou lorsqu'il ne faut que peu de force motrice. Le moteur à gazoline occupe une place qui lui est propre, il n'empêche pas de tirer de la force motrice d'autres sources, et il permet l'emploi de la force motrice à beaucoup de personnes qui, autrement, ne pourraient pas s'en servir.

Les moteurs à gazoline sont verticaux ou horizontaux, selon qu'on le préfère. Pas de mécanicien, pas de chauffeur, pas de charbon, pas de fumée, pas de cendres, pas de désordre, pas de gaspillage de combustible, et pas de danger d'incendie ou d'explosion. Les moteurs sont aujourd'hui perfectionnés à tel point que le régulateur adapté à la machine en règle automatiquement la vitesse et dose de même la quantité de combustible.

Dans les fabriques, il peut être plus commode d'employer le gaz, mais les fermiers préfèrent la gazoline. Quelques moteurs se "chauffent" en faisant simplement usage d'une allumette enflammée. D'autres se mettent en marche en tournant simplement le moteur ou en faisant tourner le volant. Point de mécanicien. Le moteur est établi sur le principe de la sécurité, et il se règle tout seul. Les fabricants de moteurs à gazoline savent bien que s'il existait le moindre doute au sujet de leur sécurité, de leur durabilité et de la somme de travail accompli, ils ne pourraient pas les vendre. Ils comprennent ce que le fermier désire, et ils sont obligés de se conformer à ses désirs, ou bien il ne s'écoulerait pas beaucoup de temps avant que les fabriques soient obligées de fermer. Le fermier peut acheter un moteur à gazoline avec l'assurance qu'il recevra une machine éprouvée; mais il ne peut pas acheter un cheval avec la certitude que l'animal est bon et peut répondre à son attente.

Le moteur à gazoline est employé dans tous États des États-Unis pour l'irrigation des champs, ainsi que pour beaucoup d'autres besoins et travaux se rattachant à l'approvisionnement d'eau. Dans quelques régions c'est une des choses essentielles pour l'approvisionnement d'eau ; on considère le comme moteur digne de confiance et économique en comparaison de quelques méthodes en usage dans certaines régions ; on l'emploie aussi pour l'approvisionnement de l'eau dans les villes.

Le moteur à gazoline peut être transporté dans n'importe quel champ et placé partout où l'on désire s'en servir. Monté sur un chariot ou sur des roues disposées à cet effet, il est prêt à fonctionner. Les fabricants le font fixe ou portatif, mais le petit moteur est si commode qu'on peut le transporter aussi près que possible de n'importe quel endroit où on veut lui faire produire de la force motrice. C'est une combinaison qu'il est impossible de surpasser.

Nous n'avons pas pour but de décrire en détail le moteur à gazoline, car n'importe quel marchand ou fermier, en écrivant à un fabricant, recevra un catalogue illustré de toutes les pièces, mais nous croyons que les marchands devraient s'efforcer de répandre davantage les moteurs à gazoline, parce que l'économie en résultant pour le fermier est un bénéfice qui profitera à la fois au marchand et au fermier. Le moteur à gazoline est fait pour rester, et il se fraie une route vers toutes les fermes.

Il est une classe de machines que les constructeurs américains réussissent tout spécialement: ce sont les nettoyeuses pour blé et orge; les séparateurs ; les vans mécaniques ; les égreneuses à maïs ; les nettoyeuses, séparateurs et trieuses à café ; les nettoyeuses à graines et semences, et les machines à battre. À nos amis d'Europe, d'Australie et de l'Amérique du Sud, nous répèterons qu'au cas où nos pages d'annonces ne suffiraient pas, même avec le secours des renseignements fournis par les catalogues à leur disposition, à les éclairer suffisamment pour leur permettre d'acheter juste et en toute connaissance de cause, nous nous ferons un plaisir de leur donner en particulier les renseignements complémentaires. La construction américaine a des mérites tout spéciaux dans cette classe d'appareils, et les usines les plus récemment établies sont particulièrement dignes d'appeler l'attention des négociants désireux de servir leur clientèle de façon tout à fait satisfaisante.

L'industrie des charrues a pris aux États-Unis des proportions gigantesques. Une charrue est toujours une charrue, mais il existe entre les modèles des différences suffisantes pour qu'il soit utile d'être un peu renseigné au sujet des principaux types de charrue qui se trouvent dans le commerce: on trouvera les renseignements voulus dans les colonnes d'annonces de notre journal. Nos charrues ont bien gagné la réputation dont elles jouissent à l'étranger, et cette réputation est durable. La clientèle étrangère n'a pas de besoins qui ne puissent être satisfaits aussi complètement et parfaitement que les besoins de notre culture nationale. L'outillage, les capacités de fabrication de nos ateliers sont complets, et l'expérience de nos fabricants est à même de repondre à toutes les exigences possibles. Les représentants et agents commerciaux d'Europe nous trouveront immédiatement prêts à les aider, par tous les moyens en notre pouvoir, à se familiariser avec les charrues américaines, y compris, bien entendu, les charrues polysocs.

APPAREILS MÉCANIQUES POUR LE FONCEMENT DES PUITS.

Un vaste champ ouvert au travail. Une industrie qui se développe rapidement.

Le "vieux seau de chêne" peut évoquer les souvenirs du passé, et le vieux puits pourrait raconter bien des histoires inédites s'il savait parler, mais la question du vieux seau de chêne possède une autre face que les siècles passés n'ont jamais pu cesser de considérer. C'est que l'eau est, avec l'air, l'élément la plus essentiel à l'existence ; la vie humaine dépend absolument de leur pureté.

L'homme, de tout temps, a compté sur les pluies pour alimenter les rivières et ruisseaux, et sur les puits pour le fournir d'eau pure pour ses besoins domestiques. Pendant des siècles il a vécu dans une paisible ignorance de ce fait que le puits dont il tirait son eau potable était un véritable bouillon de culture pour germes et parasites, que vingt maladies se cachaient dans chaque seau d'eau puisé à des sources aussi exposées à la contamination, et qu'il courait en permanence plus de dangers du fait de son puits seul qu'en raison de toutes les autres causes réunies.

Il suffit d'un coup d'œil vers les habitudes du passé pour établir une comparaison avec le présent. Le puits découvert ordinaire est le réceptacle des immondices de la ferme. On peut trouver l'assertion hardie ; il n'en est pas moins vrai qu'il n'existe pas de ferme dont l'eau ne soit contaminée si elle est exposée à l'air, à la poussière, à l'écoulement des liquides de la surface. Sitôt que l'eau touche le sol et y pénètre, elle cherche le niveau inférieur et aboutit forcément au puits par la simple action de la pesanteur.

Une expérience : qu'on mette dans l'eau froide quelques grains de café moulu, ainsi qu'une petite quantité de sucre et de sel ; puis filtrez ; l'eau sortira du filtre en apparence claire et pure. Les grains de café, étant insolubles, seront arrêtés, mais le sel et le sucre passeront avec l'eau et la suivront partout où elle ira. Les matières solubles ne sont point séparées de l'eau par le filtrage : par conséquent, l'eau du puits pourra paraître aussi claire que du cristal tout en étant contaminée par des matières organiques, matières animales décomposées ou parties solubles de végétaux en pourriture, ainsi que par des composés chimiques résultant des réactions que détermine constamment l'action de l'air, de la chaleur, de l'humidité, de la lumière ou de l'obscurité.

La location du puits importe peu, et le soin apporté à le protéger n'y fait guère : si le puits est découvert, il est toujours plus ou moins sujet à l'influence des circonstances extérieures, car il existe toujours dans le sol un écoulement allant dans un sens ou dans l'autre, et la loi de la pesanteur l'amènera au large débouché du puits. L'eau provenant de la source la plus pure et la plus limpide contient souvent des sels minéraux en dissolution, et les ruisseaux reçoivent les eaux qui ont lavé la surface de champs engraissés au fumier de ferme. En résumé, l'eau vraiment pure est une des choses les plus difficiles à obtenir, quoique l'eau soit un des corps répandus avec le plus d'abondance sur le globe.

Mais l'homme marche avec le progrès, et l'inventeur est venu trouver le moyen de prolonger la vie humaine par la découverte d'eaux pures. Il y a encore peu d'années on ignorait qu'il fût possible de chasser profondément dans le sol une sonde et un tuyau de conduite, et d'obtenir ainsi une source d'eau abondante pour tous les besoins, suffisante comme débit pour les plus vastes usines et même pour l'alimentation en eau des villages et des villes : aujourd'hui cependant, grâce aux appareils mécaniques perfectionnés qui se fabriquent pour puisatiers, on trouve et on prend l'eau à toutes les profondeurs, en quantités illimitées et dans un état de pureté quasi absolue.

L'eau d'un puits artésien, foncé jusqu'aux nappes profondes, n'a pas besoin d'être filtrée. Elle vient d'un point au delà et à l'abri des écoulements de la surface, des fientes des insectes, de la poussière, des microbes contenus dans l'air, des germes de maladie, des impuretés de toute nature. Le puits creusé, ou à ciel ouvert, peut tarir, mais le puits artésien ne tarit jamais, étant par sa profondeur même à l'abri de l'influence des sècheresses, obstructions et autres causes d'épuisement. Jamais il ne fait défaut à qui s'y approvisionne, et la température de son eau demeure constante toute l'année, fraiche en été et point glaciale en hiver. Cette eau des nappes profondes est vraiment celle que la providence a destinée à l'usage de l'homme ; elle est en réserve là depuis des siècles, tandis que l'ignorance où se trouvait l'humanité des lois de la nature permettait aux maladies, aux épidémies de se propager, tout cela parce que l'intelligence humaine n'avait pas atteint le point de culture et de développement qui devait lui permettre de trouver son eau potable ailleurs que dans des puits à ciel ouvert ou dans des cours d eau contaminés.

Mais il existe maintenant, pour foncer les puits, des machines et des appareils agencés de manière à produire d'excellent travail, des mèches de sonde qui donnent un forage rapide et aussi profond qu'on peut le désirer, des sondes, forets et cuillers d'acier, des tuyaux de conduite, en un mot tous les outils voulus pour foncer n'importe quel puits d'eau ou de pétrole ; et cet outillage a reçu de tels perfectionnements que les frais d'établissement d'un puits ne s'inscrivent plus guère que pour mémoire. La sonde à puits n'est arrêtée par aucun obstacle, elle traverse le roc aussi bien que le sable, et point n'est besoin d'une "baguette magique" pour la guider : elle trouve l'eau plus sûrement que tous les indicateurs empiriques, et cela partout où l'établissement d'un puits est possible.

C'est par centaines que l'on compte les cultivateurs et autres personnes qu'il serait facile de convaincre des avantages des puits artésiens : il suffirait pour cela de les instruire, de leur citer quelques faits précis. Ils sont tout prêts, mais personne n'est là pour se charger de la besogne. On peut l'affirmer sans crainte, l'industrie du foncement des puits ouvre un champ à l'activité de centaines de personnes, parce qu'elle a été négligée, parce qu'elle est familère à très peu de gens, et cela quoique le procédé à suivre pour l'opération de foncement soit en réalité des plus simples. Evidemment il y a quelque chose à apprendre, mais il en est de même s'il s'agit de moissonneuses ou de locomobiles, et la difficulté de l'opération est loin d'être telle qu'il faille la présence d'un expert pour la mener à bien. Personne n'a mené une sonde mécanique pour foncer des puits sans trouver la profession rémunératrice ; et il serait difficile de découvrir une industrie susceptible de rapporter un meilleur profit, en proportion au capital engagé, que celle des puisatiers employant les sondes de foncement mécaniques.

Ce n'est que dans une partie bien restreinte du monde que l'on a travaillé, jusqu'ici, à foncer des puits artésiens, et pourtant ils ont déjà la préférence de milliers de personnes. Veut-on en avoir la preuve? On trouve partout des puits ordinaires à ciel ouvert, qui ne sont jamais curés. Qu'on visite une ferme quelconque : les installations dans le but d'obtenir de l'eau pure y sont des plus arriérées, mais interrogez le fermier, et vous le trouverez tout anxieux d'arriver à se procurer de l'eau pure, et prêt à faire tout ce qu'il faudra pour cela. Le public apprend à connaitre la différence qui existe entre les impuretés solubles et insolubles. La passoire, le filtre ne suffisent pas à purifier l'eau. Qu'elle ait subi la moindre contamination, et les germes se multiplieront rapidement jusqu'à ce que toute la masse soit impure. On ne fait pas l'eau pure, on arrive à en trouver la source, et cette source ne peut se trouver que dans une nappe exempte de contaminations, à une profondeur qui la mette bien au delà et à l'abri du contact des germes et des influences pathologiques, génératrices de maladies.

Comme outillage pour le foncement des puits, ce sont les appareils mécaniques américains qui sont arrivés au plus haut point d'excellence. Facilité de manœuvre, rapidité du travail, solidité et durée des machines, dépense très réduite de l'opération de foncement, ce sont là autant de points pour lesquels ces appareils ne peuvent être surpassés : en outre, leur bas prix est sans rival. C'est là un outillage qui ne disparaitra plus, et le treuil d'autrefois avec son seau boueux est en train de passer de mode pour être relégué au musée des souvenirs.

Nous vivons dans une siècle de progrès, et de grands pas en avant ont éte faits dans bien des sens ; mais il n'est pas d'inventeurs qui aient rendu à l'humanité de plus grands services que ceux auxquels est dû l'outillage mécanique pour foncement de puits : ils ont non seulement réduit le prix d'établissement des puits et rendu l'eau moins chère, ils ont encore prolongé de plusieurs années la vie humaine et débarrassé leurs semblables de bien des soucis et des inquiétudes.

La collection des machines d'ensemencement américaines couvre un champ vaste et varié. Les semoirs en ligne, comme les autres types, sont de beaux produits de l'art mécanique entre des mains habiles. Il est impossible de les bien comprendre sans catalogues. De nouveaux perfectionnements viennent encore d'être réalisés, et méritent l'attention des exportateurs. Ces appareils peuvent se construire en très petits modèles, si on le désire. Certains semoirs, très élégants et propres à rendre les meilleurs services, sont à six rangs et se font dans les types à hoyaux, à semelles ou à disques.

LES POMPES DEMING.

La maison The Deming Company, à Salem, Ohio, dont l'annonce est publiée dans nos colonnes, possède une des usines les plus complètes qui existent aux États-Unis ou dans n'importe quel autre pays pour la fabrication de pompes en fer et en cuivre, à main et mécaniques, des Béliers hydrauliques, des fournitures pour puits, des cylindres en fer et en cuivre, etc. Sa fabrique a plusieurs acres de superficie, et ses procédés de fabrication sont tellement systématiques que l'article fini sort de la fabrique au plus haut degré de perfection, tant au point de vue de la forme qu'à celui de la matière employée ou de la main-d'œuvre mécanique. Cette perfection de forme, de matière et de construction explique le titre : "Pompes Deming, les meilleures du monde."

Le dessin représente une vue de l'usine de la maison The Deming Company, et donne une idée des grandes facilités et commodités dont elle dispose pour la fabrication et l'expédition, avec deux lignes de chemins de fer à deux pas, et des embranchements pénétrant dans diverses parties de l'usine pour la réception et l'expédition des marchandises.

L'usine Deming fabrique des centaines de modèles de pompes et de pièces de pompes. Ses produits comprennent les Pompes pour Citernes, les Pompes pour Puits, les Pompes foulantes, et les Pompes à Moulin à Vent pour l'irrigation et l'approvisionnement d'eau en général ; les Pompes à main et mécaniques pour usage domestique et pour fabriques ; les Pompes à manège pour l'irrigation ; les Pompes mécaniques et à vapeur pour puits profonds ; les Pompes mécaniques Triplex pour établissements hydrauliques, alimentation de chaudières et approvisionnement d'eau en général ; les Pompes Triplex pour mines, mues par l'électricité ; les Pompes Triplex à gazoline, pour l'approvisionnement d'eau des chemins de fer ; les Pompes Rotatoires pour divers usages ; les Pompes hydrauliques Triplex à comprimer ; les Pompes mécaniques pour puits profonds, service modéré et considérable, et les Cylindres en cuivre pour ces pompes ; les Pompes de Cale et de Pont, à l'usage des navires, les Pompes à Air comprimé et à vide, à main et mécaniques ; les Béliers hydrauliques de différentes dimensions et de modèles nouveaux, pour l'irrigation, les usages domestiques et l'approvisionnement d'eau pour fabriques ; les Pompes de Plombiers, les Pompes d'Entrepreneurs et les Pompes à incendie pour villages ; aussi Pompes vaporisant l'eau, Lances de pompes et accessoires pour soigner les arbres à fruit atteints par les ravages d'insectes nuisibles. Les Pompes Deming se vendent dans toutes les parties du monde.

Le dernier catalogue illustré complet No. 20 de la maison Deming a paru le 1er octobre. On appelle l'attention sur l'avis de la publication de ce catalogue dans le numéro d'octobre de "l'Export Implement Age," et aussi sur l'annonce remplissant toute une page et faisant voir des pages spécimen. Ce catalogue sera envoyé à tous les negociants important la quincaillerie et les machines, qui en feront la demande.

LE SECRET D'UNE BONNE RÉCOLTE.

Dans aucun pays du globe la science de l'agriculture n'a été pratiquée davantage qu'aux États-Unis d'Amérique. Les grands plateaux et les vastes prairies abondant dans ce pays, et les immenses étendues de terrain appartenant à un seul individu, on nécessité l'abolition de toutes les méthodes de travail manuel et l'emploi à peu près exclusif des machines. Le fermier des grands États agricoles fait le labour, les semailles et la récolte à la machine, et une demi-douzaine d'hommes peuvent faire le travail qui, autrement, exigerait des centaines des personnes s'il était accompli à la main.

On apporte la plus soigneuse et la plus scrupuleuse attention aux semailles, car tous les fermiers savent que si le plantage n'est pas convenablement fait la récolte sera insuffisante. Le plantage ou le semis à la main dans de grands champs, est une opération lente, et, dans le cas du semis à la volée, elle ne donne jamais satisfaction complète, car il est impossible de semer par ce moyen de la graine de foin ou du grain d'une façon égale ; par conséquent, la pousse est clairsemée dans quelques endroits, et dans d'autres si touffue qu'elle en est étouffée et retardée. Pour être sûr d'obtenir les meilleurs résultats, il faut semer la graine qui doit produire la récolte, avec une uniformité absolue sur toute la surface.

Pour obtenir ce résultat, on se sert de machines à semer, et parmi celles-ci une des meilleures et des plus pratiques pour le fermier est le semoir à la volée "Cahoon," représenté sur une autre page de ce numéro. Les fabricants sont prêts à garantir que cette machine non seulement seme cinq fois plus vite qu'à la main, mais encore qu'il y a une économie de graine d'au moins un tiers. La graine étant déposée d'une façon égale à la surface du sol, la récolte produite est beaucoup plus considérable et de meilleure qualité que cela n'est possible avec d'autres méthodes.

Le semoir est suspendu aux épaules et repose sur la poitrine, dans une position où il est facile à opérer. La graine, ou le grain, est placé dans le semoir et, au moyen d'un petit guichet ou porte, l'écoulement de la graine dans le distributeur peut être réglé au degré voulu. En tournant par la poignée la grande roue à engrenage, on fait évoluer rapidement le distributeur, qui répartit la graine d'une façon égale sur un large espace. Ce semoir sème le blé ou le seigle sur une largeur de trente pieds, et les autres grains ou graines en proportion de leur poids. La machine est garantie pour ensemencer cinquante acres de blé, trente-cinq d'avoine, ou trente de foin, en dix heures, avec facilité et de la façon la plus parfaite pour assurer la meilleure récolte possible. Elle est d'une grande simplicité de construction, et n'importe qui peut la faire fonctionner. Le semoir "Cahoon" a obtenu plus de premiers prix qu'aucune autre machine de ce genre, et lorsqu'il l'a employé une fois ce semoir devient toujours le grand favori du fermier. La machine vient d'obtenir le premier prix (médaille d'argent) et un diplôme d'honneur à l'Exposition Nationale d'Exportation à Philadelphie.

Ce semoir est fabriqué par la maison Goodell Company, 10 Warren street, à New-York (usine à Antrim, N. H.) ; on peut se le procurer par l'intermédiaire des marchands d'outils et d'instruments agricoles dans toutes les parties du monde.

MAIN D'ŒUVRE À BON MARCHÉ ET INSTRUMENTS ARATOIRES.

La main d'œuvre est bon marché en Europe, mais c'est en vain qu'on aura la main d'œuvre au plus bas prix si l'on ne fait pas usage d'instruments aratoires de la meilleure qualité. Les agriculteurs qui font de la culture à bras se trouvent dans des conditions très désavantageuses. La population de l'Inde vit en grande majorité de millet, dont elle fait le pain le plus grossier. Un petit nombre seulement peut se permettre de manger du riz, et un plus petit nombre encore consomme du blé en quantité appréciable. On n'emploie pas de fumier, car la culture n'a d'autres animaux de service que des bœufs, dont les excréments servent de combustible d'un bout à l'autre de l'Inde. Il en résulte que la terre s'appauvrit constamment à force de donner des récoltes, et que le rendement en blé décroît. Quelque vil que soit le prix payé au cultivateur hindou pour son salaire, sa main d'œuvre à trente ou quarante centimes par jour n'en élève pas moins le prix de revient du blé récolté dans l'Inde au dessus du prix de revient en Amerique, pays où l'on se sert du meilleur outillage mécanique agricole, et en même temps le rendement à l'hectare est de beaucoup inférieur. Dans les semis à la main on consomme cinquante pour cent de blé en plus que n'en sème le fermier américain. Le prix de revient à l'hectare du blé récolté dans l'Inde s'élève à 50 fr. 70 dans les terres non irriguées, et à 61 fr. 80 là où l'irrigation est practicable. C'est 25 pour 100 de plus que le prix de revient du blé à l'hectare dans le Kansas, le Dakota et le Minnesota. Il en coûte 5 fr. 30 pour produire un hectolitre de blé dans l'Inde. Chez nous, aux États-Unis, le blé pousse pour 11 francs l'hectolitre, et de meilleure qualité. 3 est donc bien prouvé que les instruments aratoires américains peuvent avantageusement servir même dans les localités où la main d'œuvre humaine est d'un bon marché excessif.

La valeur des instruments aratoires exportés au cours des sept mois finissant le ler août 1900, atteint $13,135,119. (Fr. 65,675,595) contre $10,508,725 (Fr. 62,543,625) pour la période correspondante de l'année dernière. C'est le chapitre le plus important sur la liste des produits fabriqués. Le chapitre des machines diverses accuse un chiffre qui dépasse légèrement celui-ci, mais comme branche séparée l'industrie proprement dite des instruments aratoires a le pas sur toutes les autres. Bien entendu, les exportations de cuivre et de pétrole raffiné se chiffrent par beaucoup plus. Cette position de l'industrie des instruments aratoires à la tête du commerce d'exportation a de quoi nous réjouir.

L'étude réfléchie des différents catalogues de herses récemment publiés en Amérique démontre ceci : c'est que celui qui inventera un nouveau point de supériorité, un nouveau détail de perfectionnement, sera véritablement un génie. Nous visons particulièrement les herses à disques. Leurs roulements sur billes, leur légèreté au tirage, enfin le dispositif qui maintient constamment uniforme la profondeur travaillée par les disques, voilà deux ou trois des qualités qui militent en faveur de quelques marques bien connues. La herse à disques jouit d'une réputation universelle et bien méritée.

EXPORT IMPLEMENT AGE

PARA CIRCULAR EN EL EXTRANJERO SOLAMENTE.

Periódico Independiente, dedicado exclusivamente al fomento del comercio de exportación en maquinaria para la Agricultura y lecherías, bombas, molinos de viento, aperos de labranza y suministros á cortijos, haciendas, ingenios de hacer azúcar, sitios de labor etc.

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No hay que olvidar que mientras mayor es el pedido más barato saldrá el flete en proporción.

Los aperos norteamericanos son á veces imitados, pero no hay agricultor que se pueda conformar con la imitación, pudiendo conseguir el artículo legítimo.

Los Estados Unidos están en la actualidad tan aproximados á Europa cuanto es posible, dada la gran distancia. El trayecto se hace ahora por los grandes vapores en menos de seis días.

Nueva York es la segunda gran ciudad del mundo, Londres es la primera, y París la tercera. Las ciudades de Chicago y Filadelfia, en los Estados Unidos, tienen cada una más de 1,000,000 de habitantes.

Producen los Estados Unidos más carbón y más hierro que el que necesitan para su propio uso, bien que todos los años se construyen millares de millas de ferrocarriles. És lo barato del carbón y del hierro lo que permite á los Estados Unidos venderlo al mundo entero, cosa natural puesto que los favorecen estas ventajas.

En algunas comarcas de los Estados Unidos, hay períodos de sequedad, pero como los agricultores tienen tanques de reserva, los cuales son mantenidos llenos por el uso de molinos de viento, resulta que las cosechas reciben su correspondiente riego, cuando lo han menester. El molino de viento se usa en los Estados Unidos, para muchos fines.

El que tenga un agricultor una familia numerosa, compuesta de muchos muchachos listos é industriosos, no es razón para labrar la tierra á la mano, cuando un pequeño apero puede producir el trabajo de varios individuos. El costo de sembradoras á mano, de azadas de ruedas y otras herramientas similares es casi insignificante, dado su valor real.

Los agricultores norteamericanos prefieren abrir la tierra con el arada, y en algunas circunstancias usan el arado para el subsuelo, para aflojar la capa inferior de la tierra, lo cual hace que ésta absorva y guarde mayor cantidad de humedad. El cultivo de los frutos se hace con la escardilla, el rastrillo y la cultivadora, y en todos los casos dichos aperos están fabricados en condiciones de poder producir la mayor suma de trabajo con el menor gasto de fuerza motriz.

Nuestros lectores de España pueden tener la seguridad de que en los Estados Unidos se aprecia el creciente aumento del comerico entre ambos países. Todos los buques que salen de este país con rumbo á puertos españoles llevan flete, y nuestros exportadores y fabricantes constantemente reciben demandas de precios y contestan preguntas. Sólo se requiere por parte de nuestros amigos en España alguna persistencia para establecer un buen negocio en importaciones de aperos americanos.

Los comerciantes sudamericanos no dejan de tener ventajas en vender aperos norteamericanos, ya que los Estados Unidos importan de Sud América más mercancías que lo que se supone. De hecho, son los Estados Unidos el mejor comprador que tienen las repúblicas sudamericanas, y con la venta de más aperos hechos en los Estados Unidos seguirán agregándose otros renglones, y al mismo tiempo los productos sudamericanos serán más variados.

Tan natural es para los hombres de diferentes paises el comercio y el cambio de productos, como lo es la siembra y cosecha de los frutos. El comercio entre las naciones es lo más antiguo que registra la historia. Cuando los hombres llevan sus artículos á otros países, adelanta la civilización y progresa el mundo. No hay ningún país que pueda reunir el solo todas las ventajas ; mientras más se extiende el comercio, más aumenta la riqueza.

Los azadones y azadas, las horquetas, las palas y otras herramientas hechas en este país, se usan en todo el mundo y á completa satisfacción de los operarios, porque son hechos de los mejores materiales y como para prestar los mejores servicios. No hay país en el mundo que pueda mejorar la calidad, la duración y la adaptabilidad en general de los azadones, horquetas, y palas fabricados en este país.

La primera condición que debe tener un apero es que ha de hacer el trabajo que se le encomienda. La segunda es que ha de ser duradero y no necesitar frecuentes reparaciones. También ha de trabajar rapidamente y con perfección en todas las circunstancias ordinarias. La pintura suele á veces encubrir defectos ; más, cuando el apero esta en uso, presto se da úno cuenta de su verdadero valor. El comerciante que vende artículos, debe constantemente tener en mientes que debe satisfacer al parroquiano, y tiene el deber de no venderle sino los artículos que responden á sus necesidades. Empero, siempre hay lugar para algo nuevo y mejor, pero el comerciante que entra al mercado con un artículo inferior, no permanecerá en él sino corto tiempo, porque el mérito de los artículos hace por sí solo que se vendan.

El "Export Implement Age" va á todos los países y se publica en cuatro idiomas. Por lo tanto presta un servicio importante, puesto que hace entrar á los comerciantes en relaciones. Es el interés de todos los que se ocupan de la venta de aperos agricolas, saber todo lo que ocurre fuera de su propio país. Poco importa dónde se publica un periódico comercial : la gran cuestión es que saquen provecho de él los lectores y que abra el camino para alcanzar más ventajas.

Los Estados Unidos han llegado á ser una de las principales naciones del mundo. Cien años atrás su población no era sino de 5,000,000. Ahora es de 75,000,000. Dícese que es el país más rico de la tierra. El incremento de los Estados Unidos se debe á la agricultura, pero los aperos americanos son los que han permitido á este país el cultivo en grande de todos los productos para abastecer al mundo de artículos alimenticios, por la rapidez con que los ha mejorado y llevado á la perfección.

Cuando el comercio está restringido por derechos proteccionistas, resultan protegidas unas clases en detrimento de otras. El agricultor que compra un apero no sólo desea que sea lo mejor que pueda conseguir por el precio, sí que también desea por si mismo escojer entre muchos artículos. Nadie tiene derecho á condenar un gobierno por establecer derechos proteccionistas, puesto que de alguna parte han de salir las rentas del Estado, pero los aperos agrícolas debieran entrar sin derechos en todos los países, sin excepción.

Antes de encargar un surtido de aperos, todo comerciante debe tratar de saber cuáles son los que él tiene mayor ventaja en comprar. Para esto lo mejor es pedir catálogos y circulares. No denigramos los aperos europeos, pero creemos que sería muy ventajoso para los comerciantes conocer bien los aperos norteamericanos, puesto que es este país el que más aperos produce en el mundo.

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LES POMPES DEMING.

La maison The Deming Company, à Salem, Ohio, dont l'annonce est publiée dans nos colonnes, possède une des usines les plus complètes qui existent aux États-Unis ou dans n'importe quel autre pays pour la fabrication de pompes en fer et en cuivre, à main et mécaniques, des Béliers hydrauliques, des fournitures pour puits, des cylindres en fer et en cuivre, etc. Sa fabrique a plusieurs acres de superficie, et ses procédés de fabrication sont tellement systématiques que l'article fini sort de la fabrique au plus haut degré de perfection, tant au point de vue de la forme qu'à celui de la matière employée ou de la main-d'œuvre mécanique. Cette perfection de forme, de matière et de construction explique le titre : "Pompes Deming, les meilleures du monde."

Le dessin représente une vue de l'usine de la maison The Deming Company, et donne une idée des grandes facilités et commodités dont elle dispose pour la fabrication et l'expédition, avec deux lignes de chemins de fer à deux pas, et des embranchements pénétrant dans diverses parties de l'usine pour la réception et l'expédition des marchandises.

L'usine Deming fabrique des centaines de modèles de pompes et de pièces de pompes. Ses produits comprennent les Pompes pour Citernes, les Pompes pour Puits, les Pompes foulantes, et les Pompes à Moulin à Vent pour l'irrigation et l'approvisionnement d'eau en général ; les Pompes à main et mécaniques pour usage domestique et pour fabriques ; les Pompes à manège pour l'irrigation ; les Pompes mécaniques et à vapeur pour puits profonds ; les Pompes mécaniques Triplex pour établissements hydrauliques, alimentation de chaudières et approvisionnement d'eau en général ; les Pompes Triplex pour mines, mues par l'électricité ; les Pompes Triplex à gazoline, pour l'approvisionnement d'eau des chemins de fer ; les Pompes Rotatoires pour divers usages ; les Pompes hydrauliques Triplex à comprimer ; les Ponpes mécaniques pour puits profonds, service modéré et considérable, et les Cylindres en cuivre pour ces pompes ; les Pompes de Cale et de Pont, à l'usage des navires, les Pompes à Air comprimé et à vide, à main et mécaniques ; les Béliers hydrauliques de différentes dimensions et de modèles nouveaux, pour l'irrigation, les usages domestiques et l'approvisionnement d'eau pour fabriques ; les Pompes de Plombiers, les Pompes d'Entrepreneurs et les Pompes à incendie pour villages ; aussi Pompes vaporisant l'eau, Lances de pompes et accessoires pour soigner les arbres à fruit atteints par les ravages d'insectes nuisibles. Les Pompes Deming se vendent dans toutes les parties du monde.

Le dernier catalogue illustré complet No. 20 de la maison Deming a paru le 1er octobre. On appelle l'attention sur l'avis de la publication de ce catalogue dans le numéro d'octobre de "l'Export Implement Age," et aussi sur l'annonce remplissant toute une page et faisant voir des pages spécimen. Ce catalogue sera envoyé à tous les negociants important la quincaillerie et les machines, qui en feront la demande.

LE SECRET D'UNE BONNE RÉCOLTE.

Dans aucun pays du globe la science de l'agriculture n'a été pratiquée davantage qu' aux États-Unis d'Amérique. Les grands plateaux et les vastes prairies abondant dans ce pays, et les immenses étendues de terrain appartenant à un seul individu, on nécessité l'abolition de toutes les méthodes de travail manuel et l'emploi à peu près exclusif des machines. Le fermier des grands États agricoles fait le labour, les semailles et la récolte à la machine, et une demi-douzaine d'hommes peuvent faire le travail qui, autrement, exigerait des centaines des personnes s'il était accompli à la main.

On apporte la plus soigneuse et la plus scrupuleuse attention aux semailles, car tous les fermiers savent que si le plantage n'est pas convenablement fait la récolte sera insuffisante. Le plantage ou le semis à la main dans de grands champs, est une opération lente, et, dans le cas du semis à la volée, elle ne donne jamais satisfaction complète, car il est impossible de semer par ce moyen de la graine de foin ou du grain d'une façon égale ; par conséquent, la pousse est clairsemée dans quelques endroits, et dans d'autres si touffue qu'elle en est étouffée et retardée. Pour être sûr d'obtenir les meilleurs résultats, il faut semer la graine qui doit produire la récolte, avec une uniformité absolue sur toute la surface.

Pour obtenir ce résultat, on se sert de machines à semer, et parmi celles-ci une des meilleures et des plus pratiques pour le fermier est le semoir à la volée "Cahoon," représenté sur une autre page de ce numéro. Les fabricants sont prêts à garantir que cette machine non seulement seme cinq fois plus vite qu'à la main, mais encore qu'il y a une économie de graine d'au moins un tiers. La graine étant déposée d'une façon égale à la surface du sol, la récolte produite est beaucoup plus considérable et de meilleure qualité que cela n'est possible avec d'autres méthodes.

Le semoir est suspendu aux épaules et repose sur la poitrine, dans une position où il est facile à opérer. La graine, ou le grain, est placé dans le semoir et, au moyen d'un petit guichet ou porte, l'écoulement de la graine dans le distributeur peut être réglé au degré voulu. En tournant par la poignée la grande roue à engrenage, on fait évoluer rapidement le distributeur, qui répartit la graine d'une façon égale sur un large espace. Ce semoir sème le blé ou le seigle sur une largeur de trente pieds, et les autres grains ou graines en proportion de leur poids. La machine est garantie pour ensemencer cinquante acres de blé, trente-cinq d'avoine, ou trente de foin, en dix heures, avec facilité et de la façon la plus parfaite pour assurer la meilleure récolte possible. Elle est d'une grande simplicité de construction, et n'importe qui peut la faire fonctionner. Le semoir "Cahoon" a obtenu plus de premiers prix qu'aucune autre machine de ce genre, et lorsqu'il l'a employé une fois ce semoir devient toujours le grand favori du fermier. La machine vient d'obtenir le premier prix (médaille d'argent) et un diplôme d'honneur à l'Exposition Nationale d'Exportation à Philadelphie.

Ce semoir est fabriqué par la maison Goodell Company, 10 Warren street, à New-York (usine à Antrim, N. H.) ; on peut se le procurer par l'intermédiaire des marchands d'outils et d'instruments agricoles dans toutes les parties du monde.

MAIN D'ŒUVRE À BON MARCHÉ ET INSTRUMENTS ARATOIRES.

La main d'œuvre est bon marché en Europe, mais c'est en vain qu'on aura la main d'œuvre au plus bas prix si l'on ne fait pas usage d'instruments aratoires de la meilleure qualité. Les agriculteurs qui font de la culture à bras se trouvent dans des conditions très désavantageuses. La population de l'Inde vit en grande majorité de millet, dont elle fait le pain le plus grossier. Un petit nombre seulement peut se permettre de manger du riz, et un plus petit nombre encore consomme du blé en quantité appréciable. On n'emploie pas de fumier, car la culture n'a d'autres animaux de service que des bœufs, dont les excréments servent de combustible d'un bout à l'autre de l'Inde. Il en résulte que la terre s'appauvrit constamment à force de donner des récoltes, et que le rendement en blé décroit. Quelque vil que soit le prix payé au cultivateur hindou pour son salaire, sa main d'œuvre à trente ou quarante centimes par jour n'en élève pas moins le prix de revient du blé récolté dans l'Inde au dessus du prix de revient en Amerique, pays où l'on se sert du meilleur outillage mécanique agricole, et en même temps le rendement à l'hectare est de beaucoup inférieur. Dans les semis à la main on consomme cinquante pour cent de blé en plus que n'en sème le fermier américain. Le prix de revient à l'hectare du blé récolté dans l'Inde s'élève à 50 fr. 70 dans les terres non irriguées, et à 61 fr. 80 là où l'irrigation est practicable. C'est 25 pour 100 de plus que le prix de revient du blé à l'hectare dans le Kansas, le Dakota et le Minnesota. Il en coûte 5 fr. 30 pour produire un hectolitre de blé dans l'Inde. Chez nous, aux États-Unis, le blé pousse pour Il francs l'hectolitre, et de meilleure qualité. 3 est donc bien prouvé que les instruments aratoires américains peuvent avantageusement servir même dans les localités où la main d'œuvre humaine est d'un bon marché excessif.

La valeur des instruments aratoires exportés au cours des sept mois finissant le ler août 1900, atteint $13,135,119 (Fr. 65,675,595) contre $10,508,725 (Fr. 62,543,625) pour la période correspondante de l'année dernière. C'est le chapitre le plus important sur la liste des produits fabriqués. Le chapitre des machines diverses accuse un chiffre qui dépasse légèrement celui-ci, mais comme branche séparée l'industrie proprement dite des instruments aratoires a le pas sur toutes les autres. Bien entendu, les exportations de cuivre et de pétrole raffiné se chiffrent par beaucoup plus. Cette position de l'industrie des instruments aratoires à la tête du commerce d'exportation a de quoi nous réjouir.

L'étude réfléchie des différents catalogues de herses récemment publiés en Amérique démontre ceci : c'est que celui qui inventera un nouveau point de supériorité, un nouveau détail de perfectionnement, sera véritablement un génie. Nous visons particulièrement les herses à disques. Leurs roulements sur billes, leur légèreté au tirage, enfin le dispositif qui maintient constamment uniforme la profondeur travaillée par les disques, voilà deux ou trois des qualités qui militent en faveur de quelques marques bien connues. La herse à disques jouit d'une réputation universelle et bien méritée.

EXPORT IMPLEMENT AGE

PARA CIRCULAR EN EL EXTRANJERO SOLAMENTE.

Periódico Independiente, dedicado exclusivamente al fomento del comercio de exportación en maquinaria para la Agricultura y lecherías, bombas, molinos de viento, aperos de labranza y suministros á cortijos, haciendas, ingenios de hacer azúcar, sitios de labor etc.

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No hay que olvidar que mientras mayor es el pedido más barato saldrá el flete en proporción.

Los aperos norteamericanos son á veces imitados, pero no hay agricultor que se pueda conformar con la imitación, pudiendo conseguir el artículo legítimo.

Los Estados Unidos están en la actualidad tan aproximados á Europa cuanto es posible, dada la gran distancia. El trayecto se hace ahora por los grandes vapores en menos de seis días.

Nueva York es la segunda gran ciudad del mundo. Londres es la primera, y París la tercera. Las ciudades de Chicago y Filadelfia, en los Estados Unidos, tienen cada una más de 1,000,000 de habitantes.

Producen los Estados Unidos más carbón y más hierro que el que necesitan para su propio uso, bien que todos los años se construyen millares de millas de ferrocarriles. Es lo barato del carbón y del hierro lo que permite á los Estados Unidos venderlo al mundo entero, cosa natural puesto que los favorecen estas ventajas.

En algunas comarcas de los Estados Unidos, hay períodos de sequedad, pero como los agricultores tienen tanques de reserva, los cuales son mantenidos llenos por el uso de molinos de viento, resulta que las cosechas reciben su correspondiente riego, cuando lo han menester. El molino de viento se usa en los Estados Unidos, para muchos fines.

El que tenga un agricultor una familia numerosa, compuesta de muchos muchachos listos é industriosos, no es razón para labrar la tierra á la mano, cuando un pequeño apero puede producir el trabajo de varios individuos. El costo de sembradoras á mano, de azadas de ruedas y otras herramientas similares es casi insignificante, dado su valor real.

Los agricultores norteamericanos prefieren abrir la tierra con el arada, y en algunas circunstancias usan el arado para el subsuelo, para aflojar la capa inferior de la tierra, lo cual hace que ésta absorva y guarde mayor cantidad de humedad. El cultivo de los frutos se hace con la escardilla, el rastrillo y la cultivadora, y en todos los casos dichos aperos están fabricados en condiciones de poder producir la mayor suma de trabajo con el menor gasto de fuerza motriz.

Nuestros lectores de España pueden tener la seguridad de que en los Estados Unidos se aprecia el creciente aumento del comerico entre ambos países. Todos los buques que salen de este país con rumbo á puertos españoles llevan flete, y nuestros exportadores y fabricantes constantemente reciben demandas de precios y contestan preguntas. Sólo se requiere por parte de nuestros amigos en España alguna persistencia para establecer un buen negocio en importaciones de aperos americanos.

Los comerciantes sudamericanos no dejan de tener ventajas en vender aperos norteamericanos, ya que los Estados Unidos importan de Sud América más mercancias que lo que se supone. De hecho, son los Estados Unidos el mejor comprador que tienen las repúblicas sudamericanas, y con la venta de más aperos hechos en los Estados Unidos seguirán agregándose otros renglones, y al mismo tiempo los productos sudamericanos serán más variados.

Tan natural es para los hombres de diferentes países el comercio y el cambio de productos, como lo es la siembra y cosecha de los frutos. El comercio entre las naciones es lo más antiguo que registra la historia. Cuando los hombres llevan sus articulos á otros paises, adelanta la civilización y progresa el mundo. No hay ningún país que pueda reunir el solo todas las ventajas ; mientras más se extiende el comercio, más aumenta la riqueza.

Los azadones y azadas, las horquetas, las palas y otras herramientas hechas en este país, se usan en todo el mundo y á completa satisfacción de los operarios, porque son hechos de los mejores materiales y como para prestar los mejores servicios. No hay país en el mundo que pueda mejorar la calidad, la duración y la adaptabilidad en general de los azadones, horquetas, y palas fabricados en este país.

La primera condición que debe tener un apero es que ha de hacer el trabajo que se le encomienda. La segunda es que ha de ser duradero y no necesitar frecuentes reparaciones. También ha de trabajar rapidamente y con perfección en todas las circunstancias ordinarias. La pintura suele á veces encubrir defectos ; más, cuando el apero esta en uso, presto se da úno cuenta de su verdadero valor. El comerciante que vende artículos, debe constantemente tener en mientes que debe satisfacer al parroquiano, y tiene el deber de no venderle sino los artículos que responden á sus necesidades. Empero, siempre hay lugar para algo nuevo y mejor, pero el comerciante que entra al mercado con un artículo inferior, no permanecerá en él sino corto tiempo, porque el mérito de los artículos hace por sí solo que se vendan.

El "Export Implement Age" va á todos los países y se publica en cuatro idiomas. Por lo tanto presta un servicio importante, puesto que hace entrar á los comerciantes en relaciones. Es el interés de todos los que se ocupan de la venta de aperos agricolas, saber todo lo que ocurre fuera de su propio país. Poco importa dónde se publica un periódico comercial ; la gran cuestión es que saquen provecho de él los lectores y que abra el camino para alcanzar más ventajas.

Los Estados Unidos han llegado á ser una de las principales naciones del mundo. Cien años atrás su población no era sino de 5,000,000. Ahora es de 75,000,000. Dícese que es el país más rico de la tierra. El incremento de los Estados Unidos se debe á la agricultura, pero los aperos americanos son los que han permitido á este país el cultivo en grande de todos los productos para abastecer al mundo de artículos alimenticios, por la rapidez con que los ha mejorado y llevado á la perfección.

Cuando el comercio está restringido por derechos proteccionistas, resultan protegidas unas clases en detrimento de otras. El agricultor que compra un apero no sólo desea que sea lo mejor que pueda conseguir por el precio, sí que también desea por sí mismo escojer entre muchos artículos. Nadie tiene derecho á condenar un gobierno por establecer derechos proteccionistas, puesto que de alguna parte han de salir las rentas del Estado, pero los aperos agrícolas debieran entrar sin derechos en todos los países, sin excepción.

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INTENTIONAL SECOND EXPOSURE

MOTORES DE GAS Y DE GASOLINA.

Su eficacia para la granja, y la gran economia de fuerza motriz y gastos que resulta de su empleo.

Bien que esté en algunos países prohibida la importación de motores de gas y de gasolina, no habrá empero barrera alguna que impedir pueda la introducción de un artículo que posee por sí mismo el mérito suficiente para imponerse á la atención. Mucho tiempo ha venido usándose en Europa el motor de petroleo; pero los americanos han descubierto que los motores de gas y de gasolina prestan mejores servicios, por ser dignos de toda confianza, rapidamente puestos en moción, seguros en cuanto á accidentes, y de gran potencia, amén de muchos otros rasgos notables. Es pues cosa averiguada que los motores de gas y de gasolina merecen tenerse en consideración en todos los países, y también lo es que los fabricantes americanos sobresalen en su construcción.

En los pasados tiempos ha dependido el agricultor por muchos siglos del trabajo de los caballos y bueyes, y la fuerza de esas tradiciones agrícolas es tál, que no está dispuesto en general á prescindir de la rutina y seguir el consejo que lo induciría á mantener menos animales, y poner en uso más motores, de donde derivaria mayores utilidades por la reducción de los gastos y la disminución de las tareas de la mano de obra.

El fabricante, al contrario del agricultor, practica sus negocios con estricta economía, y para tener utilidad ha de recurrir al empleo de las máquinas motoras ó algún otro sistema que reuna las condiciones de duración, reducido espacio, eficacia y certeza. Ni el caballo ni el buey pueden prestar ayuda para alcanzar este resultado. El referido fabricante ha sido educado por las circunstancias y de ellas deriva su conocimiento de la necesidad del empleo de motores para poder medrar en su industria. No así el agricultor, porque como no se ha visto en la obligación de emplear motores en su forma más barata, ha tenido que pagar más caro lo mismo que el manufacturero consigue á un costo infimo.

La fuerza motriz de esta época es producida por el combustible. Hasta la más pequeña granja ha sido invadida por aperos y maquinarias que reemplazan los caballos. Recientemente ha aparecido la autodalladora para segar yerba; bien conocida es la automóbil, (tanto aplicada al coche ligero como al pesado carretón), y también tenemos el autoarado, la autocultivadora, el autorastrillo, todos los cuales tienen ya ganadas sus credenciales. Dentro de pocos años no habrá para qué emplear el término "auto," por lo común que llegará á ser este sistema. Ya no se usan caballos para los tramvías urbanos; las compañías de transporte también los están desechando, y en las grandes explotaciones agrícolas, más se emplean para la silla que para el tiro.

Es el agricultor quién paga más cara la fuerza motriz. Vese en la necesidad de tener grandes edificios para sus caballos y su ganado, y no puede emplear dichos animales sino en ciertas épocas y para ciertas faenas, ni los puede usar en el período del crecimiento que representa tres ó cuatro años, y cuenta que el costo de la mantención en ese lapso no se incluye en el de la fuerza motriz en los subsiguientes años.

Mas no es el agricultor el único interesado en los motores de gas y de gasolina, puesto que éstos tienen aún más demanda en los caseríos, aldeas y ciudades que en las granjas. Una de las más notables ventajas de los motores de gasolina es que pueden servir de auxiliares á las máquinas de vapor. Los motores americanos de gas y de gasolina, son de la mayor fuerza de caballos que se fabrican, en proporción al tamaño y al espacio que ocupan, y se les puede emplear junto con motores de vapor cuando se trata de caldear prontamente para algún trabajo pasajero. Por ejemplo cuando no sea necesario encender la caldera de un motor de vapor, se echa mano del motor de gasolina; y algunas fábricas emplean motores de gasolina al mismo tiempo que los motores de vapor, unicamente con este objeto, puesto que se caldean casi instantaneamente y no hacen gasto de combustible cuando no están trabajando. No se entienda por esto que pueda el motor de gasolina reemplazar el de vapor, puesto que éste es tan necesario hoy día como los años pasados, pero repetimos que el motor de gasolina llena una necesidad que no compete al motor de vapor, y aumenta los proventos de las máquinas de vapor, puesto que proporciona á los operarios economías, en las épocas muertas en que no se requiere sino escasa fuerza motriz. El puesto que ocupa es suyo propio, y no colide con motores de otra clase; amén de que muchos puedan con su ayuda usar fuerza motriz, que de otro modo no estaría á su alcance.

Estos motores de gasolina se hacen verticales ú horizontales, como se prefieran. No requieren maquinista, ni fogonero, ni carbón, ni producen humo, ni cenizas, ni suciedad, ni desperdicios, ni requieren combustible, ni hay peligro de incendio ó de explosión. Los motores están tan perfeccionados en la presente época, que su regulador gradúa automaticamente la velocidad y suministra el combustible necesario.

En las fábricas sería más conveniente usar gas, pero el agricultor prefiere la gasolina. Algunos motores se encienden con un simple fósforo; otros son puestos en marcha con sólo abrir la llave ó dando vuelta á la rueda del volante. No se necesita ningún operario. Están fabricados según el principio de seguridad y ellos solos se regularizan. Los fabricantes de motores de gasolina, bien saben que si hubiera alguna duda con referencia á la seguridad, duración y cantidad de trabajo producido, no les sería posible venderlos. Ellos comprenden lo que desea el agricultor, y están en la obligación de complacerlo, ó de otro modo no tardarían las fábricas de estos motores en quebrar. El agriculter puede comprar un motor de gasolina con la seguridad que recibirá una máquina probada, al paso que no puede comprar un caballo con la certeza que el animal esté sano y en capacidad de producir el trabajo que de él se espera.

En todos los Estados de la Unión, se usa el motor de gasolina para regar y para todas las demás faenas que se relacionan con el suministro de agua. En algunas comarcas es uno de los agentes principales de suministro de agua, y se le considera como digno de toda confianza y el método más barato si se le compara con los sistemas que se emplean en algunas regiones; además de esto se emplea aqui tambien para suministrar agua á las ciudades.

El motor de gasolina se puede llevar á cualquier parte, y se puede colocar donde convenga para su uso. Colocado sobre una carreta ó sobre ruedas ad hoc, siempre está dispuesto para el trabajo. Los fabricantes los hacen estables ó portatiles; más es de tan fácil manejo este pequeño motor, que se puede transportar donde quiera y también cabe en el más reducido espacio, donde se necesite su fuerza motriz. Es en resumen una combinación que no puede desearse mejor.

No es nuestro propósito dar la descripción pormenorizada de un motor de gasolina, puesto que todos los comerciantes ó agricultores que escriban al fabricante, recibirán catálogos y descripciones ilustrados de todos ellos, pero sí creemos que los comerciantes en aperos agrícolas debieran propender á la importación de mayor número de motores de gasolina, puesto que las utilidades que de su uso saque el agricultor, redundarán en provecho de ambos, tanto del comerciante introductor como del agricultor. El motor de gasolina se ha posesionado del puesto que merece, y se está abriendo camino hacia todos los establecimientos agrícolas.

Los fabricantes americanos creen haber añadido tantas mejoras á sus separadoras que la súplica que dirijen á los compradores europeos de ensayar sus aparatos, parece enteramente legítima. Con el aumento en eficiencia y perfección de los aparos, diminuyen en proporcion los gastos; y se puede afirmar con seguridad que ningún país sobresalga los Estados Unidos de Norte América en cuanto á la excelencia de sus separadoras de crema.

Las separadoras americanas, así como las mantequilleras, etc., tienen extensa reputación. Existen en los Estados Unidos centenares de fábricas de mantequillla, y por lo tanto bien saben ya los criadores, cuáles son las buenas separadoras y las mantequilleras que convienen, y cuáles son las que se han de desechar. Es pues de gran importancia saber cuáles son las separadoras que se usan en las grandes fábricas de mantequilla de los Estados Unidos, puesto que es fuerza que sean los mejores aperos que existen en el mercado, y que las separadoras que allí se emplean trabajen con toda la perfección que se puede desear.

El valor de los aperos agrícolas que se han exportado en los primeros siete meses de 1900, hasta 1° de Agosto, es de $13,135,119 contra $10,508,725 en la misma época del año pasado. Esta partida es la mayor entre las exportaciones de productos manufacturados. Sólo la partida denominada "Miscelanea de maquinarias" es un tanto mayor que este guarismo, pero la industria de aperos agrícolas excede á todas las demás. La exportación de cobre y de aceite refinado por supuesto que suma un guarismo muy superior. Es muy satisfactoria la posición que ocupa la industria de los aperos á la cabeza de las exportaciones.

MAQUINARIA PARA POZOS ARTESIANOS.

Un ancho campo abierto al trabajo. Una industria que va en rapido crecimiento.

El antiguo balde de roble nos recuerda los tiempos pasados, y serían harto interesante las historias que referirían los viejos algibes si les fuera dado hablar, pero hay otra faz de estas cuestiones, que por muchos siglos no se ha tenido en cuenta y es que el agua y el aire son las dos cosas más esenciales á la vida, y de su pureza depende la vida humana.

El hombre ha recogido las aguas lluvias para complementar el agua de los ríos, lagunas y arroyos, y se ha valido de los algibes para suministrarle el agua necesaria para sus usos domésticos. Por muchos siglos se ha vivido en la ignorancia más completa de que esos algibes eran una madriguera de microbios, y que el germen de todas las enfermedades estaba contenido en las vasijas de agua extraída de tales pozos abiertos, y que por lo tanto más peligros amenazaban por parte de los algibes que por las demás causas combinadas.

Con echar una sola mirada hacia los tiempos pasados, es más que suficiente para establecer la comparación. El algibe abierto es el receptáculo de todas las inmundicias de la granja. Esta aserción parece temeraria, y sin embargo el agua de los algibes está contaminada por su exposición al aire, al polvo, y á las filtraciones de la superficie. El agua tiende á su propio nivel aún cuando sólo se introduce en la tierra y es natural que corra hacia la ondonada que forma el pozo.

Bastará una sencilla demostración para probar nuestro aserto. Echese en el agua un poco de café molido y un poco de azúcar y de sal. Fíltrese el agua y se verá que ésta pasa por el filtro en apariencia clara y pura. Ahora bien, el café no pasará á través del filtro por que es insoluble, más no así el azúcar y la sal, los cuales seguirán unidos al agua donde quiera que vaya. Las materias solubles no pueden ser separadas del agua por filtración, y es ese el motivo por el cual, aunque el agua del algibe parezca tan clara como el cristal, puede sin embargo contener materias animales en descomposición, partes solubles de vegetación podrida, el todo mezclado con las combinaciones químicas que pueden haber ocurrido por la acción del calor, del aire, de la humedad, y de la oscuridad.

Nada importa el sitio en que esté el algibe, ni el cuidado con que se le haya protegido; si es un algibe abierto, estará más ó menos sujeto á las circunstancias ambientes; no dejará de derramarse alguna agua en algún sitio y las leyes di gravitación la llevarán hacia la abertura del poso descubierto. El agua del más cristalino manantial, puede contener substancias minerales en disolución, y las aguas lluvias, desleen los campos abonados con el estiércol de las caballerizas y los desechos de todas las procedencias. El agua pura es una de las substancias que más difícil es conseguir, sin embargo de ser el agua una de los elementos que más abundan sobre la tierra.

Pero el hombre de progreso, ha ideado manera de prolongar su vida consiguiendo agua pura. Años atrás no se sabía que un tubo se puede introducir en la tierra, para sacar por ese medio una buena cantidad de agua para llenar todas las necesidades, en abundancia suficiente para las grandes fabrícas, y hasta para abastecer ciudades y aldeas. Y la maquinaria perfordora de pozos artesianos, como se hace en la actualidad, no sólo extrae el agua de cualquier profundidad, y en las cantidades que se requiere, sino completamente pura.

No puede el agua extraída de los pozos artesianos contener filtraciones, porque está fuera del alcance de los derrames de la superficie, así como de los insectos, el polvo, los microbios del aire, los gérmenes de enfermedades, y las deyecciones de todas clases. Por manera que si bien el poso abierto tiene todos los inconvenientes, el pozo perforado no tiene ninguno, porque como hemos dicho, está fuera de alcance de todos ellos. El suminitro es siempre el mismo y su temperatura es fresca en verano, sin ser demasiado fría en invierno. El agua ha existido siempre en las grandes profundidades de la tierra y allí ha sido dispuesta para el uso del hombre, pero la ignorancia de las leyes de la naturaleza, ha sido causa de la propagación de las enfermedades y de las epidemias, por no haber el hombre adelantado aún hasta el grado de llegar á buscar el agua potable en otros sitios que no sean los algibes y los arroyos ó acequias contaminados.

En el día de hoy, existen maquinarias perforadoras de pozos artesianos adaptadas para dar el mejor resultado: barrenas que perforan con rapidez y á la profundidad que se desee, vasijas de acero, punzones y tubos de acero y otras accesorios para oradar toda clase de pozos, ora para agua ó para petróleo, y se les ha mejorado tánto, que el costo de la perforación de un pozo ha llegado á ser meramente nominal. La maquinaria perforadora de pozos no es detenida por ningún obstáculo, puesto que pasa á través de la arena lo mismo que de la piedra, ni requiere varitas adivinadoras, porque halla el agua con más seguridad que el mejor experto, en todo tiempo y lugar en que se pueda perforar un pozo.

Hay centenares de agricultores y otros individuos que sólo requieren un poco de educación, ó sea algún experimento, para convencerse de las ventajas del pozo artesiano. Ellos están dispuestos á adoptarlos, pero ninguno se decide á emprender la obra, y bien se puede asegurar que el arte de perforar pozos abre un ancho campo de trabajo para centenares de personas, por ser una industria que se descuida, siendo así que hay pocos individuos familiarizados con ella, bien que la perforación de un pozo sea una operación sencillísima. Bien es cierto que requiere un tiempo de tanteo, pues lo mismo se puede decir de cualquier segadora ú otra máquina, pero no es tánta la dificultad, para hacer necesaria la intervención de un experto. Todos los que hayan usado la maquinaria perforadora de pozos, pueden decir que es una industria que da excelentes resultados, y si hubiere algun otro recurso que deje más utilidad en proporción del captial invertido, puede decirse que aún no se ha descubierto.

En sólo una pequeña parte del mundo se ha hecho propaganda para los pozos artesianos y sin embargo son muchos ya los agricultores que los prefieren. Prueba de este aserto son los algibes que donde quiera se hallan, en su estado peculiar de desaseo. Visítense las alquerías donde ese estado de cosas permanece y después de conversar sobre las ventajas de los pozos artesianos con el dueño de la finca, éste se mostrará dispuesto á adoptar las nuevas instalaciones que le proporcionen agua pura. Las gentes empiezan á conocer la diferencia que existe entre las inmundicias solubles y las que no lo son. Los coladores y los filtros no pueden hacer pura el agua, y cuando está en lo más mínimo contaminada, los gérmenes seguirán multiplicándose hasta que toda esté impura; el agua pura no se hace, sino que se consigue y debe irse á buscar á una fuente que no esté contaminada y á una profundidad que esté fuéra del alcance de los gérmenes y microbios de las enfermedades.

La maquinaria americana perforadora de pozos ha alcanzado el más alto grado de eficacia, por la facilidad y la rapidez del trabajo, la duración del las maquinarias y la gran reducción en el gasto de perforación de un pozo, así como el poco costo de la maquinaria, son cosas en que no temen los fabricantes de este país la competencia. Ya el antiguo sistema de algibes está herido de muerte, y en el porvenir sólo se le verá en los museos de antigüedades.

Está edad es de progreso, y trayendo á cuentas todos los benéficos inventos, con ninguno es comparable en beneficios para la humanidad, el de las maquinarias perforadoras de pozos artesianos, porque no sólo abaratan el costo de los pozos y del agua, sino que prolongan la vida humana y le alivian muchas preocupaciones.

La Asociación Nacional Americana de Fabricantes de Aperos Agrícolas y de Vehículos celebró su reunión anual los días 31 de Octubre y 1° y 2 de Noviembre. Esta Sociedad está compuesta de casi todos los principales manufactureros, y en su reunión anual se discuten materias de gran importancia con respecto al comercio, incluyendo la cuestión del flete (tanto el de ferrocarriles como el de agua) las leyes que rigen las ventas, los créditos, los asuntos internacionales relacionados con la industria de los aperos, el comercio extranjero, los contratos con los comerciantes al detal, etc. Esta Sociedad no es una organización en la cual tienen los socios un depósito de mercancías, ó en la cual han invertido capital, sino que su propósito es unicamente considerar las materias relacionadas con la industria de aperos y vehículos. Ha reportado muchos beneficios, porque sus miembros son representantes de las mayores fábricas y procuran colocar unicamente la mejor clase de artículos del mercado.

Un cuidadoso estudio de varios catálogos americanos recientemente publicados, muestran que los inventores de perfeccionamientos, son realmente ingeniosos. Nos referimos especialmente á los rastrillos de disco. Sus coginetes de balas, la ligereza de su tiro, y la disposición que hace que los discos cubren una profundidad igual, son rasgos notables de algunas de las fábricas más conocidas. El rastrillo de disco tiene una extensa y bien merecida reputación.

APAREJOS NORTEAMERICANOS PARA FÁBRICAS.

La última remesa de cualesquiera maquinarias de labranza enviadas al extranjero, contiene las más modernas mejoras en todas las máquinas. La misma atención y el mismo cuidadoso esmero se pone en obra para la máquina agrícola más grande como para el más mínimo apero.

Pero sobretodo un punto debe tenerse siempre en cuenta. Es que los establecimientos en que se fabrican las maquinarias, pasan por las más rígidas exigencias por parte de los contramaestres, siendo así que las instalaciones tales como bancos, herramientas, correajes, equipos y todos los aparejos necesarios para la fabricación y la conclusión de las manufacturas, son objeto de especial estudio, de constantes pruebas y mejoras hasta llegar á la meta de lo práctico y lo perfecto.

Por manera que los talleres donde se fabrican las maquinarias norteamericanas, son tan modernos y tan adelantados como lo son las mismas manufacturas que en éllos se fabrican. De esta suerte, tiene el comerciante que negocia en máquinas americanas, sólida base para su negocio, ya que los artículos que ofrece en venta presentan las mayores garantías que se pueden brindar. Las casas que hemos reseñado en nuestras columnas de anuncios, tienen todas inmensas instalaciones provistas del más moderno equipo. Entre el lector en relaciones con alguna de ellas.

Los norteamericanos, en los primeros años de su maravilloso desarrollo, no tardaron en reconocer el valor de los molinos de viento, y por pronta providencia ejercitóse el ingenio de los inventores en poner á contribución la fuerza del viento. La casi absoluta perfección se ha alcanzado en materia de molinos de viento y grande sería el desconsuelo de millares de agricultores norteamericanos si se les privara de tan constante y útil ayuda. Mucho ganarían los labradores europeos, así como los hacendados y criadores de Sur América y otros países, si se familiarizaran con el molino de viento. Las diferencias y particularidades de las distintas marcas de fábrica, pronto serían conocidas de los parroquianos que tuvieran interés en comprarlos. No hay, puede decirse, límite en los servicios que puede prestar el molino de viento. Todo lo que se publica sobre este apero en los Estados Unidos es instructivo é interesante. Las agencias del extranjero que puedan contribuir al desarrollo de las importaciones de este artículo, pueden desde luego contar con todas las facilidades para recibir informes detallados.

El surtido de maquinarias americanas sembradoras de granos, abarca un gran número de aparatos. Las sembradoras de varias clases son muestras adecuadas de perfección mecánica, mas no es posible tener de ellas una idea sin el catálogo. Recientemente se han practicado muchas mejoras que han de llamar la atención de los exportadores. Dichos aperos se pueden hacer en muy pequeñas dimensiones, si se desea. Algunas sembradoras bien pulidas y prácticas tienen 6 hileras, y se hacen en estilo de azadón, de zapato ó de disco.

EL SECRETO DE UNA BUENA COSECHA.

En ningún país del mundo se ha perfeccionado tanto la ciencia de la agricultura como en Norte America. Los numerosos terrenos, las vastas llanuras de este país y las grandes propiedades pertenecientes á un mismo dueño, han hecho necesaria la abolición de todos los métodos manuales y el uso casi exclusivo de las maquinarias. El agricultor de los Estados agrícolas, ara siembra y cosecha por medio de maquinarias, y de esta suerte pueden media docena de braceros producir el trabajo que de otro modo necesitaria el empleo de centenares de obreros.

La atención más esmerada se pone en obra en la acción de sembrar la semilla, pues que todos los agricultores saben que si no se hace esto convenientemente, la cosecha será escasa. La siembra de semillas en anchos campos, cuando se practica á la mano, es muy lenta y si se hace lanzada al vuelo nunca satisface completamente, porque es imposible sembrar granos con perfecta igualdad por ese método, y por consiguiente resulta la yerba escasa en algunos sitios, al paso que en otros es tan tupida que su crecimiento es retrasado y estorbado. Para obtener los mejores resultados, se ha de sembrar la semilla con absoluta uniformidad sobre toda la superficie.

Este resultado se alcanza con precisión por medio de las maquinarias para sembrar, y entre estas una de las mejores y más prácticas para el agricultor, es la sembradora al vuelo "Cahoon," cuyo grabado está adjunto. Los fabricantes están dispuestos á garantir que esta máquina no tan sólo siembra cinco veces más á prisa que á la mano, sí que también procura una economía de semillas lo menos de una tercera parte. Como se depositan con perfecta igualdad sobre la superficie del terreno, de ahí resulta más abundancia en la cosecha y mejor calidad que la que se obtiene por otros sistemas.

La sembradora va colgada de los hombros por delante del cuerpo en una posición cómoda para la operación. La semilla ó el grano están colocados en el saco y, por medio de una pequeña abertura, la caída de los granos sobre la aventadora se puede regularizar como se desee. Al darle vuelta á la gran rueda de engranaje con la mano, se hace girar la aven adora con rapidez y distribuir la semilla con completa igualdad sobre una extensa area. Puede sembrar trigo ó centeno abarcando una extensión de treinta piés, y las otras semillas en proporción de su peso. La máquina está garantida para sembrar cincuenta acres de trigo, treinta y cinco de avena, ó treinta de yerba, en diez horas, con toda comodidad y de la manera más perfecta para alcanzar la mejor cosecha. Su construcción es en extremo sencilla y puede ser accionada por cualquier persona. La sembradora "Cahoon" ha obtenido mayor número de primeros premios que cualquiera otra máquina de esta clase, y cuando se ha sembrado una vez con ella, sigue después siendo favorita del agricultor. Esta máquina acaba de obtener el primer premio (una medalla de plata) y un diploma en la Exposición Nacional para la Exportación, de Filadelfia.

Sus fabricantes son la Goodell Company, 10 Warren street, New York, N. Y., Estados Unidos de Norte América (Fábricas en Antrim, N. H.), y se puede conseguir por medio de todos los comerciantes en aperos del mundo entero.

LAS BOMBAS DEMING.

La casa The Deming Company, de Salem, Ohio, cuyo anuncio está inserto en nuestras columnas, posee uno de los establecimientos más completos de los Estados Unidos y demás países dedicados á la fabricación de bombas de hierro y de bronce, movidas á mano ó por medio de motores, pisones hidráulicos, materiales para pozos, cilindros de hierro y de bronce, etc. Los establecimientos de esta compañía ocupan varios acres de terreno, y su procedimiento de fabricacion es tan sistemático que el artículo está terminado en el más completo estado de perfección, ora se le considere desde el punto de vista de la idea, del material, ó del trabajo mecánico. Tal perfección de diseño, de material y de construcción, justifica el título "Las Bombas Deming, las mejores del mundo."

El grabado representa una vista de las fábricas de la Compañía Deming, y da una idea de lo convenientes que son sus departamentos de fabricación y de expedición de los artículos, con dos ferrocarriles con desvíos, que van directamente á varios puntos de sus edificios, para recibir y despachar mercancías.

En la fábrica de Deming se hacen centenares de modelos de bombas y de accesorios para bombas. Sus manufacturas comprenden bombas para cisternas y para pozos y bombas para motor; bombas para molinos de viento para riego y suministro general de agua; bombas para ser accionadas á mano y por motor, para usos domésticos y para fábricas; bombas accionadas por caballos, para riego; motores para pozos artesianos y bombas de vapor; bombas de motor de triple expansión para juegos de agua, para suministro de calderas y uso general; bombas de triple expansión para minas, accionadas por la electricidad; bombas con motor de gasolina de triplo expansión para suministro de agua á los ferrocarriles; bombas rotativas para varios usos; bombas de triple expansión, para presión hidráulica; bombas con motor para pozos artesianos, para trabajos fuertes y trabajos fáciles; cilindros de bronce para estas bombas; bombas de carena bombas para la cubietrta de buques; bombas para comprimir aire y para hacer el vacío, movidas á mano ó por fuerza motriz; pisones hidráulicos de varios tamaños y de nueva forma, para riego, para usos domésticos y para fábricas; bombas para obreros plomistas; bombas para contratistas, y bombas para incendios, para usar en aldeas; también, bombas de llovizna y accesorios para curar árboles contra las plagas de insectos. Las bombas Deming se venden en todas las partes del mundo.

El último catálogo ilustrado completo No. 20 de la Deming Company contiene 272 páginas y se dió á la estampa el primero de Octubre. Se llama la atención hacia el aviso de publicación del referido catálogo en el número de Octubre del "Export Implement Age," así como hacia la gran página de avisos mostrando páginas de muestra de dicho catálogo. Este catálogo será enviado á todos los comerciantes del extranjero en ferretería y maquinarias siempre que lo pidan.

El comercio de los Estados Unidos con Australia va en aumento todos los años. La América del Norte compra lanas en gran cantidad en Australia y Sur América, y en cambio les vende sus aperos y maquinarias.

AULTMAN-MILLER
BUCKEYE

Highest Prize Medals at World's Fairs at

Vienna, 1873; Philadelphia, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, and the Gold Medal of the Paris Exposition, 1900.

Las Medallas más valiosas en las Exposiciones Universales de

Viena, 1873; Filadelfia, 1876; París, 1878; Victoria, 1886; Chicago, 1893, y La Medalla de Oro en la Exposición de París de 1900.

Les plus Hautes Médailles de Mérite aux Expositions Universelles de

Vienne, 1873; Philadelphie, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, et la Médaille d'or à l'Exposition de Paris de 1900.

Die höchsten Preis-Medaillen auf den Weltausstellungen von

Wien, 1873; Philadelphia, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, und die goldene Medaille auf der Pariser Weltausstellung von 1900.

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LEGITIMATE BUSINESS METHODS.

The Importance of Experience, Reliability and Strict Adherence to Honorable Business Principles.

The evil of seeking to sell agricultural implements to other than legitimate dealers in implements has been so often demonstrated in the last quarter of a century that it would appear strange to call attention to a recurrence of the evil now. Retail merchants have certain rights which cannot be ignored without sure injury to the jobber or manufacturer who disregards them.

To reach the position of a retailer requires years of effort, prudence, foresight and an understanding of the wants of the community. To rent a room or two, and pay a janitor to paint and put up a sign, "John Smith, Implement Dealer," does not make one. There are certain unwritten and mutual obligations existing between men which to ignore is to do injustice to one's self. The manufacturers and jobbers are in the same boat. The country takes and can take about so many implements. This sum total cannot be varied much by unfair methods or peculiar dealings. There are recognized business methods which, when pursued, bring the best results, but they call for the exercise of a high standard of commercial morality. The trouble is to get all manufacturers, jobbers and dealers to live up to it. Some do not, and hence all have to try to keep the few from hurting the entire trade. It is an old question. It resolves itself into, "Am I my brother's keeper?" In truth, we are, to the extent of doing unto others as we would be done by. The manufacturer has something else to do besides manufacturing and selling his goods. It is to maintain a code of commercial morality, and to remember that not all who would buy deserve to be sold to. There are buyers in every market who have no moral business to buy. Business has its morals, and dealers cannot ignore the fact. Retailers are in a sense dependent on the observance by manufacturers and jobbers of a certain ideal standard of commercial morality. To break from it is to weaken our business system as blood poisoning weakens the physical system. The old saying that ninety-five out of every one hundred business men fail is true only because men are not true to the higher standards of commercial morality within them.

EVIDENCES OF AMERICAN INGENUITY.

"Inventions have so reduced the cost of production that there is more propriety in saying that we manufacture wheat than in saying that we raise it," says a writer in "Cassier's Magazine." "Indeed, there is scarcely a thing done on a farm to-day in which patented machinery does not perform the greater part of the labor. The grain is sowed, cut, bound, thrashed, cleaned, sacked, stored and transported by machinery, while the mower cuts, the tedder spreads, the horserake gathers, the hayloader loads and the carrier unloads the hay. The potatoes are planted and dug by patented machines or implements, and even the hogs are slaughtered and the chickens hatched by machinery. In the household we have the sewing machine, the washing machine and wringer, the egg beater, the nutmeg grater, the meat grinder, the potato shredder and countless other implements, all the result of the patent system. In fact, one cannot touch a thing in the factory, on the farm, in the office or in the household that does not bear the impress of patented invention. Without the patent system these inventions would probably not have existed. To-day all Europe is alarmed at American progress in that line, and her public men and press everywhere agree that America's wonderful growth is due to her patent system."

DIRECT FROM UNITED STATES CONSULS.

The following are extracts from letters from the United States consuls in various parts of the world addressed to "The Export Implement Age:"

Mr. Julian Phelphs, United States Consul at Krefeld, Germany, writes: "There is a field for the sale of farm machinery in this part of Germany unsurpassed anywhere."

Mr. George H. Pickerell, United States Consul, St. Michael's, Azores, writes: "There are frequent calls made to see cuts of farming machinery and tools by the native farmers."

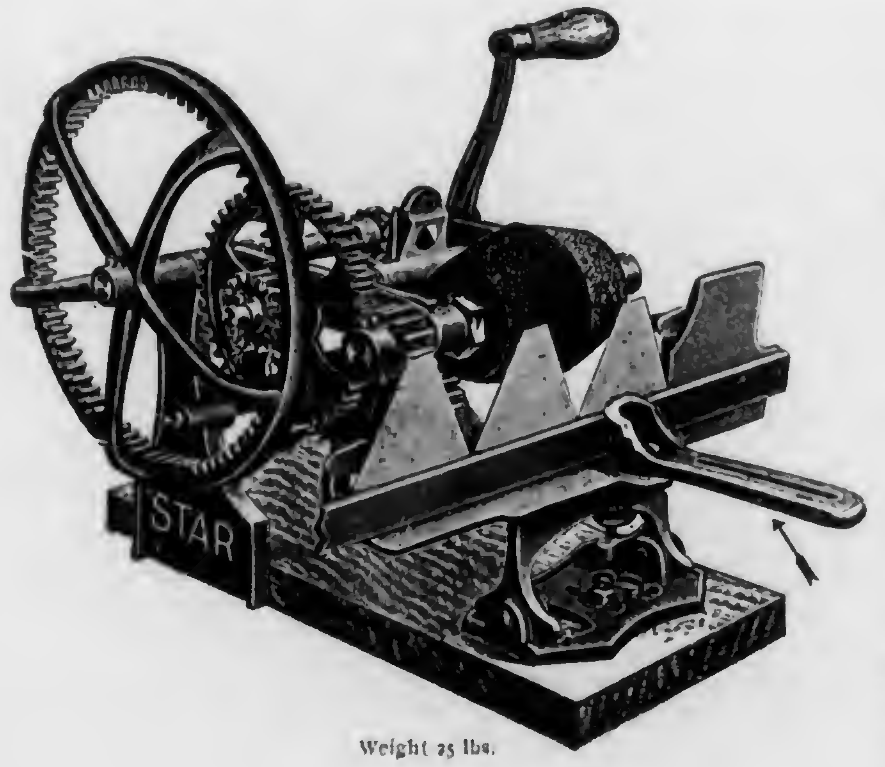
Mr. Robert P. Skinner, United States Consul at Marseilles, France, writes: "Those manufacturers who have established agencies and have placed their wares under the eyes of the prospective buyer, offering to the buyer an article already seen, and upon terms expressed in foreign currency, and in the foreign language, are meeting with success, and there is room for others in the same field."

Mr. H. W. Harris, United States Consul at Mannheim, Germany, writes: "American manufacturers are getting a substantial foothold here, and have done so by using precisely the same common-sense methods used to secure trade at home."

Mr. J. C. Ingersoll, United States Consul at Copenhagen, Denmark, says: "American trade with this country is growing all the time, and such journals as yours render efficient aid in that work."

DRILLS AND SEEDERS.

In comparing, point by point, the various advantages of the different drills the accustomed observer is struck with the originality displayed in the mechanical details to eliminate every possible crudity, and to create which is rightfully to be regarded as a thing of art in mechanism. The mechanical contrivances are commendable features. The adaptability of these machines to sow various kinds of grain is remarkable, and one which commends itself to progressive foreigners. The export trade is now called upon by its foreign patrons to forward considerable special information concerning drills and seeders.



Weight 25 lbs.

CLIZBE BROS.

★ ★ ★ ★ AUTOMATIC ★ ★ ★ ★

"Star" Sickle and Tool Grinder

Or MOWING MACHINE KNIFE GRINDER.

Grinds a perfect bevel on new or old knives, and positively cannot grind out steel, nor grind off the points.

Knives are set so you can see what you are doing. It grinds out the nicks.

It can be taken to the field with mower, works well on the ground, don't have to be fastened to wheel of mower.

Guaranteed to do good work when properly adjusted, and against breakage in transit. Stones are guaranteed for one year.

Our prices are cheaper than you can buy a so-called Sickle-Grinder for.

These machines are indorsed by all the leading Harvesting Machine Companies in the United States and Europe.

Write us and we will send you a handsome poster with full size cut of our Star Sickle and Tool Grinder, printed in four colors, and a catalogue and price-list of everything made in Emery Grinders and Emery Wheels.

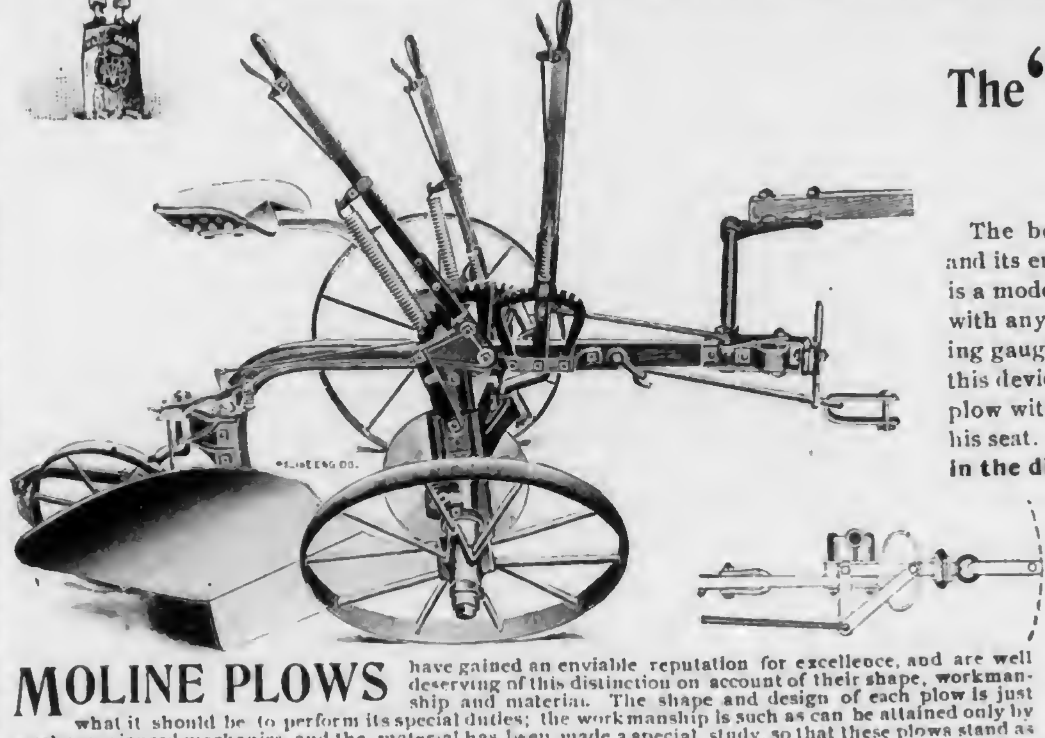
CLIZBE BROS. MFG. CO. PLYMOUTH, IND., U. S. A.

Manufacturers of the Famous "Moline Plows" and "Flying Dutchman" Farm Implements.

MOLINE PLOW CO.

MOLINE, ILLINOIS, U.S.A.

WALKING and RIDING PLOWS
PIPE LEVER HARROWS
and DISC HARROWS,
CORN DRILLS and PLANTERS,
CORN CULTIVATORS,
SUGAR PLOWS and
CULTIVATORS,
BEET SEEDERS, CULTIVATORS and HARVESTERS.



The "Good Enough" Sulky Plow.

("Bastante Bueno")

The best evidence of the value of this plow lies in its great popularity and its enormous sales in the United States and many foreign countries. It is a model of simplicity in design and construction, and can be equipped with any size of plow bottom desired. It is fitted with the new style landing gauge shown in the illustration and detail cut. The great advantage of this device is that it enables the operator to regulate the "landing" of the plow with two, three or four horses in any kind of ground without leaving his seat. **This means of "landing" causes the plow to always travel in the direct line of draft, and insures lighter draft.**

Correspondence from agriculturists and dealers in any part of the world cheerfully and promptly attended to.

We issue Catalogues and Circulars in the English and Spanish languages describing our unrivaled line of Walking and Riding Plows, Harrows, Drills, Cultivators, etc.

MOLINE PLOWS have gained an enviable reputation for excellence, and are well deserving of this distinction on account of their shape, workmanship and material. The shape and design of each plow is just what it should be to perform its special duties; the workmanship is such as can be attained only by most experienced mechanics, and the material has been made a special study, so that these plows stand as models of excellence.

☞ We take the liberty of calling your attention to the suits of the Mercantile Publishing Syndicate (Limited) against the Western Union Telegraph Co., and same against the International Cable Directory Co., and another, decided in the High Court of Justice, Queen's Bench Division (England), before Mr. Justice Ridley, as appears from The London Times of July 11th, 1899, in which suits judgment was rendered, enjoining the publication or sale, by the defendants or their agents, of the Western Union Telegraphic Code and International Cable Directory, on the ground that such publication and sale are infringements on the copyright of the plaintiff in those actions.

LIEBER'S STANDARD CODE.

An Entirely Original Code.

$10.00.

SELECTED CODE WORDS	The Ciphers are selected from the "OFFICIAL VOCABULARY," care having been taken to omit such DANGEROUS ciphers as "cheap," "charge," "collect," bi-monthly," "eleventh," "eighteenth," "cargo," etc.
CONTENTS	The Code contains 800 pages of 75,000 Ciphers; 65,000 have sentences, and 10,000 are blank, enabling the addition of private phrases under their proper headings.
DIRECTORY OF USERS	LIEBER'S MANUAL, published every three months, contains a revised list of those using the code. NO OTHER CODE FURNISHES SUCH A LIST.
BEST EXTANT	That LIEBER'S CODE is recognized as the best ever offered the public is shown by the following houses, who have unqualifiedly endorsed it in preference to all others:

Collins Plow Co.
Vermont Farm Machine Co.
Goulds Mfg. Co.
Moline Plow Co.
Milwaukee Harvester Co.
D. M. Osborne & Co.
Warder, Bushnell & Glessner Co.
Stoddard Mfg. Co.
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Carnegie Steel Co.
Pennsylvania Steel Co.
Maryland Steel Co.
John Stephenson Co.
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United Verde Copper Co.
Anaconda Mining Co.
Orford Copper Co.
W. H. Crossman & Bro.
W. R. Grace & Co.
Flint, Eddy & Co.
G. Amsinck & Co.
Crown Mfg. Co.
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Flint & Walling Mfg. Co.
Star Drilling Machine Co
Baltimore & Ohio R. R.
American Express Co.
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Grand Trunk Railway.

LIEBER CODE CO.,

2 and 4 Stone Street,
New York.

20 Bucklersbury,
London, E. C.

BIRDSELL CLOVER AND ALFALFA HULLERS.

SEND FOR CATALOG.

BIRDSELL MANUFACTURING COMPANY, SOUTH BEND, INDIANA, U. S. A.

Well Sown—Rich Harvest.

Be Careful of the First and the Second is assured.

The Cahoon SEED SOWER

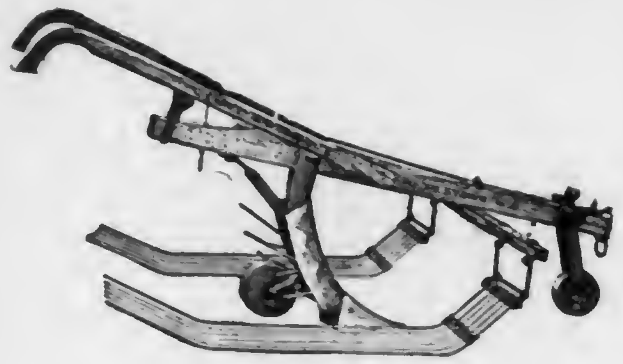
Not only sows all kinds of Grain and Cleaned Grass Seed perfectly, but does it five times faster, with one-third less seed, than is possible by hand.
Produces vigorous, plentiful harvest.
One day's use will more than pay for itself.
Sold by all first-class dealers throughout the world.

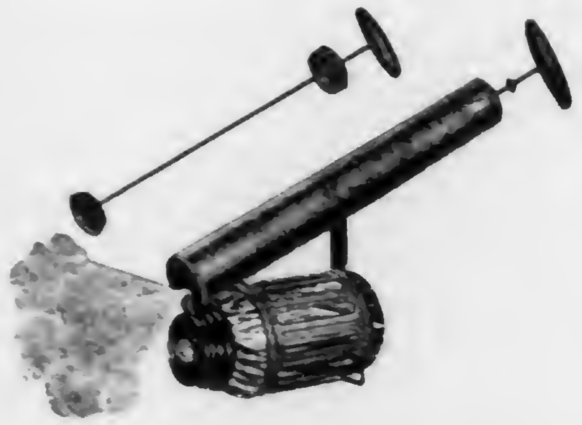
Catalogue on Request. GOODELL COMPANY, 10 Warren St., N.Y.C., U.S.A.

H. O. RACHNER & CO., BERLIN, Agents for Germany and Austria.

POTATO DIGGERS AND INSECT DESTROYERS.

The crop statistics show a remarkable expansion from year to year of the potato yield of the United States. It is not at all surprising, therefore, that so much attention should be given to the manufacture of diggers. The various diggers show extremes of inventive talent. A good digger finds all the potatoes, whether they are way down in the ground or near the surface. Every maker of potato diggers understands what nice adjustments are necessary in a successful potato digger to dig right. A careless digger soon does enough damage to pay for a good one. For a long time there was trouble in regulating the depth to which the digger ran. Too deep meant lost power and too much dirt to hunt potatoes out of. Too shallow meant sliced potatoes before the cook had a chance at them. Then some diggers were all right for one kind of soil and all wrong for another.





The laborious duty of potato digging, with its attendant labor and waste, is made easy by the employment of a tool that performs the work perfectly, and which sells at a price within the reach of every farmer. It is a machine that will do the work in nearly all conditions of soil. It has vibrating steel fingers which separate the potatoes from the dirt and deposit them on either side of the row in plain sight, while two wheels (front and rear) insure an even depth, light draft, and steady running wheels. We show the illustration on this page.

It is constructed upon strictly scientific principles to do this special work, and solves the problem of how to get potatoes out of the ground free from soil and as quickly and rapidly as a horse can walk. A machine that will do this, and last a long time must be of the best material and of high-class workmanship. The name given to this machine by its manufacturer, Mr. H. W. Doughten, Moorestown, N. J., U. S. A., is "King of the Potato Field."

It is economical to the farmer, both in the first cost and in its use. It is in successful operation in nearly every State and Territory in the United States. Dealers find little difficulty in introducing such a machine, because they can demonstrate that it does the work and the sales are easy.

Mr. Doughten also manufactures the Double Tube Lightning Insect Exterminator, which we illustrate, for the use of farmers, gardeners, florists and stockmen. It is a sprayer that is unlike any other on the market to-day. One plunge of the handle produces two large sprays, covering a radius of two and one-half feet. The reservoir is of glass, which will not rust out, and which enables the operator at all times to see the ingredients mixing and just how they are working. Any kind of liquid mixture can be used.

For use in the sprayer Mr. Doughten makes what is probably the most effective preparation made for killing or driving away flies and insects. This "Flykiller Oil," applied with the sprayer, will keep flies away from the stock during the summer months, and by actual experiment it has been found to greatly increase the flow of milk, in some cases fully twenty per cent.

Dealers who are interested in this class of goods should write for fuller information, as the manufacturer makes an exceedingly attractive proposition to dealers everywhere. Communications should be addressed to H. W. Doughten, Moorestown, N. J., U. S. A.

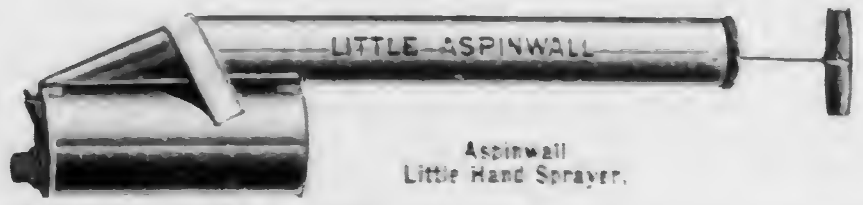
MEXICAN-AMERICAN LINE.

Vice-Consul-General Hardy, of Mexico, sends the following announcement of the organization of the Mexican-American Steamship Company:

"Before the close of the year international business between Mexico and the United States will enjoy the advantage of another strong steamship line that will operate boats between Mexican and American gulf ports. The formation of the new company was brought about by the reorganization of the Mexican Gulf Steamship Company under the name of the Mexican-American Steamship Company. The old company's boats operate between New Orleans and Tampico. The new company will at once extend the service to include the ports of Vera Cruz and Progreso. The headquarters of the new company will be located in St. Louis, Mo., and Mr. O. F. Spindler, agent of the Mexican Gulf Company, at New Orleans, has been elected president. The Mexican-American Steamship Company proposes to establish semi-monthly sailings, and the new service will begin about November 1st."

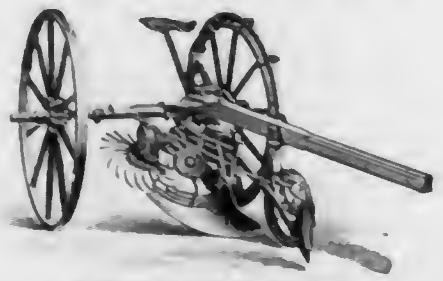
ASPINWALL POTATO MACHINERY

Aspinwall Potato Planter.



Aspinwall
Little Hand Sprayer.

Reputation established. Over twenty years on the market. Used and endorsed by thousands the world over. We also make Barrel Churns, Lawn Swings, Post Hole Diggers and Weeders. Write for catalogues and prices.



Aspinwall Potato Digger.

MAQUINARIA "ASPINWALL" PARA PATATAS (PAPAS)

Bien sentada Reputación en el espacio de Veinte Años en el Mercado. Usadas y Recomendadas por millares de parroquianos en todo el mundo. Fabricamos también Mantequilleras de Barril—Columpios de Lawn—Ahoyadoras de Agujeros y Escardillas. Escríbase pidiendo Catálogos y precios.

APPAREILS ASPINWALL POUR TRAITEMENT DES POMMES DE TERRE.

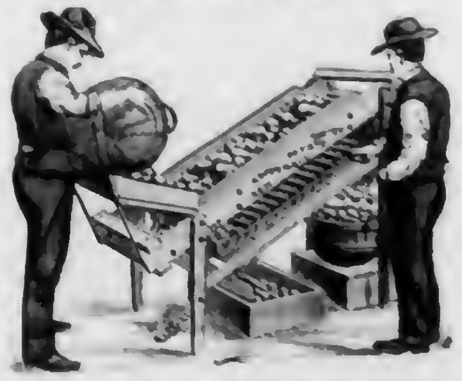
Réputation établie dans le Commerce depuis plus de vingt ans. En usage et en faveur chez des milliers de clients dans le Monde entier. Nous fabriquons également les Barattes à beurre, Balançoires de Pelouse—Appareils pour planter les Poteaux et Sarcloirs à mauvaises herbes. Demander par lettre les Catalogues et Prix Courants.

"ASPINWALL" KARTOFFELE-GRATE

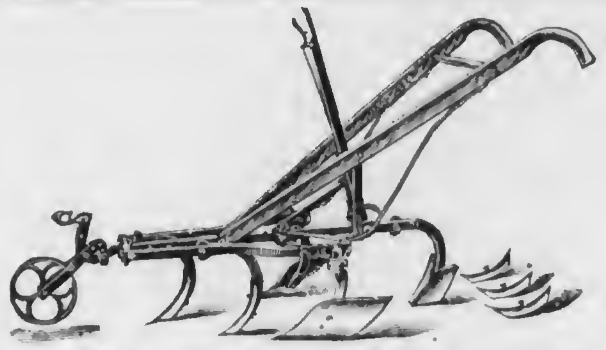
Stehen seit über zwanzig Jahren im Handel in bestem Rufe. Sie werden in der ganzen Welt von Tausenden benutzt und empfohlen. Wir fabriziren auch Butterfässer, Schaukeln, Pfostensetzer und Jäter. Kataloge und Preislisten gratis und franco.

DEPT. B
ASPINWALL MANUFACTURING CO., Jackson, Mich., U.S.A.

Aspinwall 4-Row Sprayer.



Aspinwall Sorter.



The No. 6 "Iron Age" Horse Hoe and Cultivator, with Plain Wheel.

THE "IRON AGE"
Farm and Garden
Implements.

A TYPICAL LINE OF THE MODERN TOOLS USED BY THE AMERICAN FARMER.

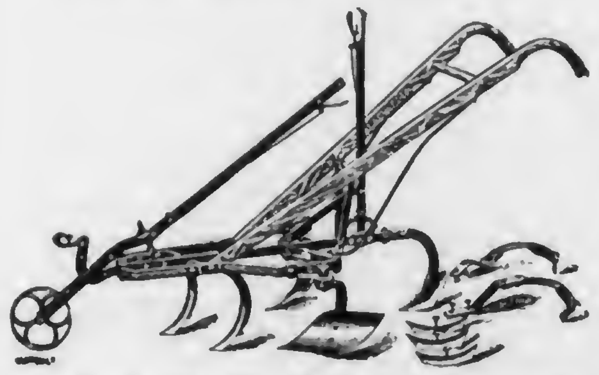
Very light, but exceedingly strong, and wonderfully convenient for all purposes.

The No. 6 "Iron Age" Horse Hoe and Cultivator Equipped for Level Cultivation.

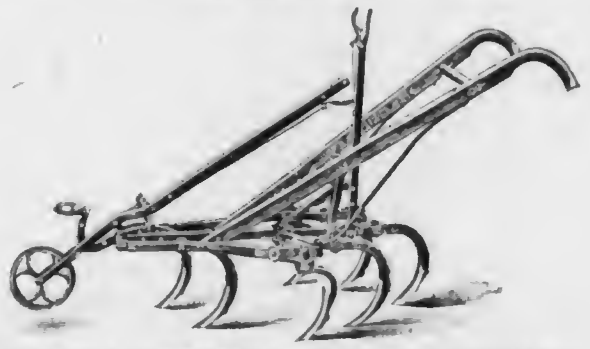
The No. 1 "Iron Age" Double Wheel Hoe.

The No. 6 "Iron Age" Combined Wheel Hoe, Hill and Drill Seeder.

The No. 4 "Iron Age" Combined Seed Drill and Wheel Hoe.



The No. 6 "Iron Age" Horse Hoe and Cultivator, Complete.



The No. 6 "Iron Age" Horse Hoe as a Cultivator, shown with "Furrow-Closing" Attachment.

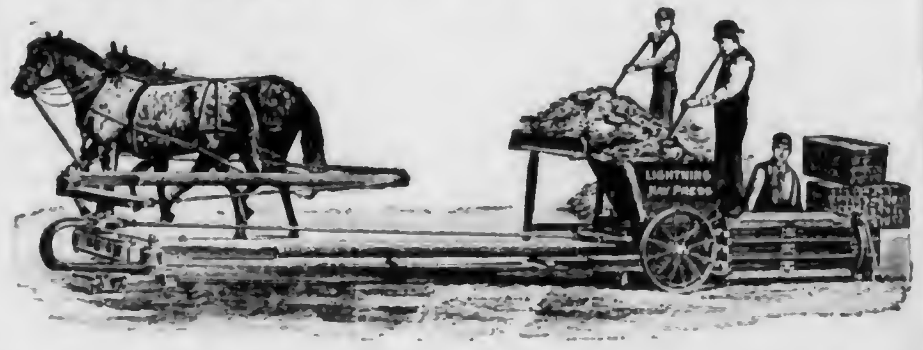
BATEMAN MFG. CO.,
Box X. GRENLOCH, N. J., U. S. A.
EUROPEAN AGENCIES: GEO. W. SILLCOX, Brussels.
LANKESTER & CO., London.
AUSTRALASIAN: ARTHUR YATES & CO., Sydney.
Works Established 1836. Correspondence Solicited.

SALEM IRON WORKS,
SALEM, N. C., U. S. A.

Manufacturers of Steam Engines, Saw Mills, Wood Planers, Railroad Cross-Tie Machines, Coffee Hullers, Pulpers, Washers, Dryers, Polishers, Centrifugals, etc. Complete equipments furnished for Saw Mills and Woodworking Establishments or plants for handling the Coffee Crop. Estimates furnished on application. Parties interested should state explicitly what they want. Full Descriptive Circulars or Catalogues mailed on application.

The above cut shows the U. S. Coffee Huller, Manufactured by the Salem Iron Works, Salem, N. C., U. S. A.

LIGHTNING HAY PRESSES.



All Styles. Steam and Horse Power. All Metal.

MOST POWERFUL AND DURABLE.

Greatest Capacity.
10 to 40 Tons per Day.

KANSAS CITY HAY PRESS CO.
Kansas City, Mo., U. S. A.
409 MILL STREET.

MAUD S.
WIND MILL AND PUMP CO.
Lansing, Mich., U. S. A.

Manufacturers of the Original
Maud S. Pumps,
Pumping and Power Windmills,
ESPECIALLY FOR EXPORT.

Write for our latest Illustrated Catalogue.

EXPORT OFFICE:
2-4 Stone St., New York.
P. AUBECK, Manager.

P. AUBECK, 2-4 Stone St., New York, U. S. A.

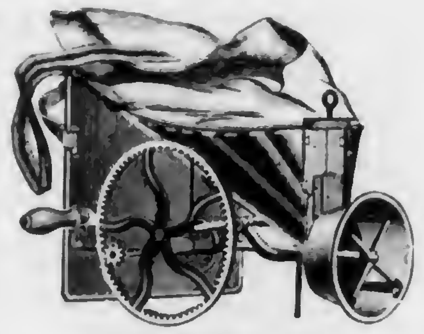
Cable Address, "ALAMPE."
Manufacturers' Export Representative.
N. B.—Correspondence in any language promptly attended to.

Dirección por Cable, "ALAMPE."
Representante de Fabricantes para la Exportación.
N. B.—Se atenderá con Despacho á la Correspondencia en cualquier Idioma.

THE SECRET OF A GOOD CROP.

In no country on the globe has the science of agriculture been more pursued than in the United States of America. The large table-lands and vast prairies abounding in that country, and the immense tracts under individual ownership, have made necessary the abolition of all manual methods and the almost exclusive use of machinery. The farmer of the large agricultural States plows the land, sows the seed, and gathers the harvest by machinery, and half a dozen men can perform the labor which otherwise would require hundreds if performed by hand.

Most careful and particular attention is paid to the sowing of the seed as every farmer is aware of the fact that if the planting be not properly done the harvest will fall short. To plant or sow seed on large fields, if performed by hand is slow work, and in the case of broadcast sowing is never wholly satisfactory, it being impossible to sow grass seed or grain evenly by that method, consequently the growth is sparse in some places and in others so thick as to be choked and retarded. To insure the best results harvest seed must be sown with absolute uniformity over the entire surface.


Cahoon Broadcast Sower.

To accomplish this result use is made of machines for sowing, and among these one of the best and most practical for the farmer is the Cahoon broadcast sower shown herewith. The manufacturers stand ready to guarantee that this machine will not only sow five times faster than by hand, but there is a saving of at least one-third in the seed. Being deposited evenly over the surface of the ground a harvest is produced much larger and of better quality than is possible by other methods.

The sower is suspended from the shoulders in front of the body and in easy position for operation. The seed or grain is placed in the hopper, and by means of a small shutter or gate the flow of seed to the fan may be regulated to any desired degree. Turning the large gear wheel by the handle causes the fan to revolve rapidly and distribute the seed evenly over a wide area. It will sow wheat or rye thirty feet wide, and other seed in proportion to its weight. The machine is warranted to sow fifty acres of wheat, thirty-five of oats, or thirty of grass in ten hours, with ease, and in the most perfect manner to secure the best possible harvest. It is exceedingly simple in construction and may be operated by anyone. The Cahoon seed sower has taken more first prizes than any similar machine, and once it is used it is always a prime favorite with the farmer. The machine has just taken first prize (silver medal) and diploma at the National Export Exposition at Philadelphia.

Manufactured by Goodell Company, 10 Warren street, New York City, N. Y., U. S. A. (works at Antrim, N. H.), and may be procured through implement dealers in all parts of the world.

HAND CREAM SEPARATORS.

Dairy interests are proverbially quick to notice and adopt improved hand separators. Some recent makes deserve attention. What the best gains in butter over some of the poorer makes would soon pay the cost of the superior make. The mechanical separator was one of the latest contributions to advanced dairying. Improvement after improvement has been made until it would seem perfection has been reached. There is abroad in some quarters something like a prejudice against the separator, and agents working in communities where their merits are not established find some difficulty in introducing them. The present American separator cannot help but gain a recognition wherever they are given an opportunity to demonstrate their excellence.

FACTORY ADDITIONS AND IMPROVEMENTS.

The Iowa Farming Tool Co., Fort Madison, Ia., U. S. A., have erected this summer new buildings for their finishing and polishing departments and have made important improvements in their other buildings.

The Wiard Plow Co., Batavia, N. Y., U. S. A., are erecting a brick building of unusually substantial construction, to be used as a storage house for iron. The roof will be of iron and the floor of flagstone. The company has recently put in two additional cupolas and has enlarged the molding room by a brick addition. A powerful new hydraulic elevator is used to lift the fuel and iron to the cupolas.

The Acme Harvester Co., Pekin, Ill., U. S. A., is just completing an electric power plant, which will comprise 500 horse-power in generators and motors. Electricity is the sole power to be used in this plant, each machine being driven by an electric motor.

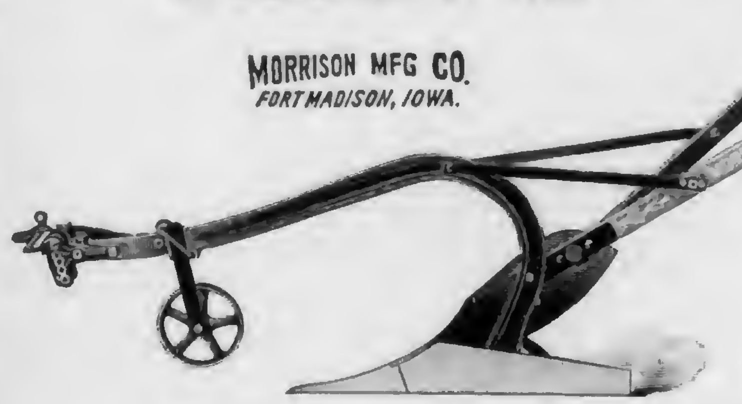
The Deering Harvester Co., Chicago, Ill., U. S. A., is erecting a five-story warehouse, costing $40,000.

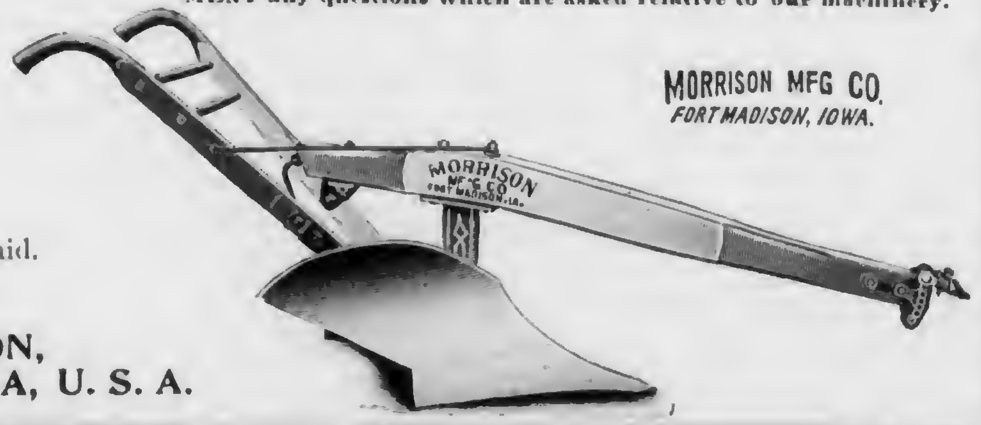
The McCormick Harvesting Machine Co., Chicago, Ill., U. S. A., is erecting a building at Kansas City, Mo., U. S. A., to be used for general warehouse and office purposes. The building will cost $90,000.

The Morrison Manufacturing Co., Fort Madison, Ia., U. S. A., has, in the process of completion, a fine new office building, which, in point of equipment and beauty of finish, will be a model of its kind. The interior will be finished in mahogany. Extensive emprovements have been made by the company in its factory.

The plant of Smith Harper & Sons, Philadelphia, Pa., U. S. A., has been entirely remodeled and enlarged and new machinery has been installed. The capacity of the plant has been greatly increased.

The David Bradley Manufacturing Co., Bradley, Ill., U. S. A., have added several new machines to their extensive line. For next year's trade they will place on the market a new sulky plow, a disc cultivator, a balance spring cultivator and a one-horse drill, with or without fertilizer attachment.


MORRISON MFG CO.
FORT MADISON, IOWA.


MORRISON MFG CO.
FORT MADISON, IOWA.
MORRISON MFG CO FORT MADISON, IA.

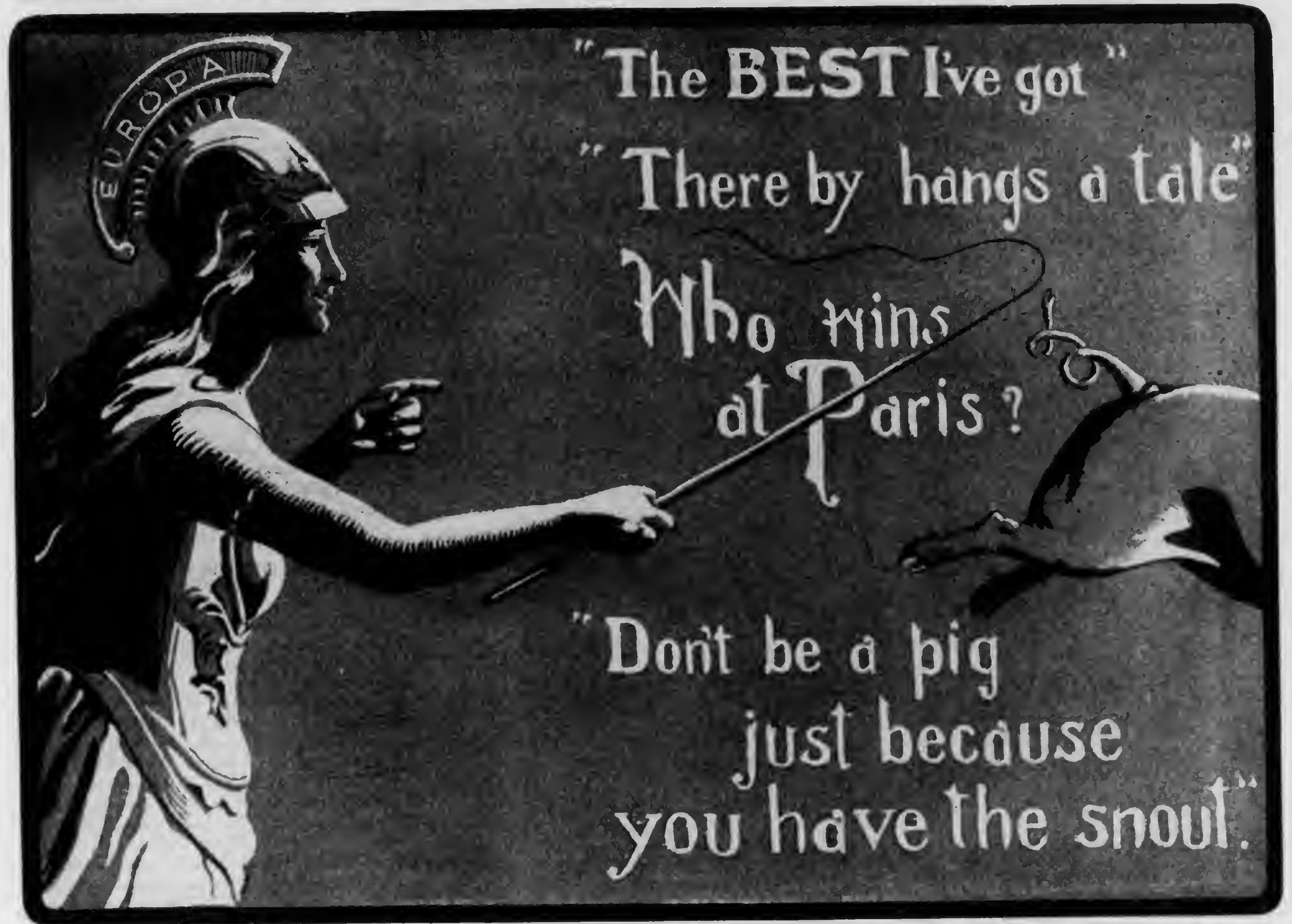
THE HEIGHT OF PLOW PERFECTION IS REACHED IN THE **MORRISON PLOW,**

which has been made for nearly fifty years on the same spot. Many awards, diplomas and medals at county, state, national and international expositions attest its merits.

We are always glad to answer THROUGH OUR EXPORT DEPARTMENT any questions which are asked relative to our machinery.

Printed Catalogues and Circulars free; postage paid.
We solicit correspondence.

MORRISON MFG. CO., FORT MADISON, IOWA, U. S. A.


EUROPA
"The BEST I've got"
"There by hangs a tale"
Who wins at Paris?
"Don't be a pig just because you have the snout."

The announcements of some manufacturers of Harvesting Machinery would intimate that they have secured a much higher award at Paris than any other exhibitor in their line. For the benefit of the public who are entitled to the facts, we wish to state that there were FOUR GRAND PRIZES of EQUAL RANK awarded to American Exhibitors.

SEE BELOW WHO WINS AT PARIS

American Exhibitors of Harvesting Machinery.

GRAND PRIZES
OF EQUAL RANK.

D. M. Osborne & Co.
McCormick Harvesting Machine Co.
Deering Harvesting Co.
Adriance, Platt & Co.

GOLD MEDALS
OF EQUAL RANK.

Plano Manufacturing Co.
Walter A. Wood Mowing and Reaping Machine Co.
Johnston Harvester Co.
Milwaukee Harvester Co.
Aultman, Miller & Co.
Warder, Bushnell & Glessner Co.

SILVER MEDALS

and some Gold Medals were awarded parties already named for Twine and retrospective exhibits, etc.

It is not fair for any one to intimate that they got the "whole cake," for they did not get it. The jury did not award it that way. We took one of the Four Grand Prizes of **equal rank**, awarded to American exhibits in our line.
No other exhibitor got anything **More Grand** or **Higher**.

D. M. OSBORNE & CO., AUBURN, N. Y., U. S. A.

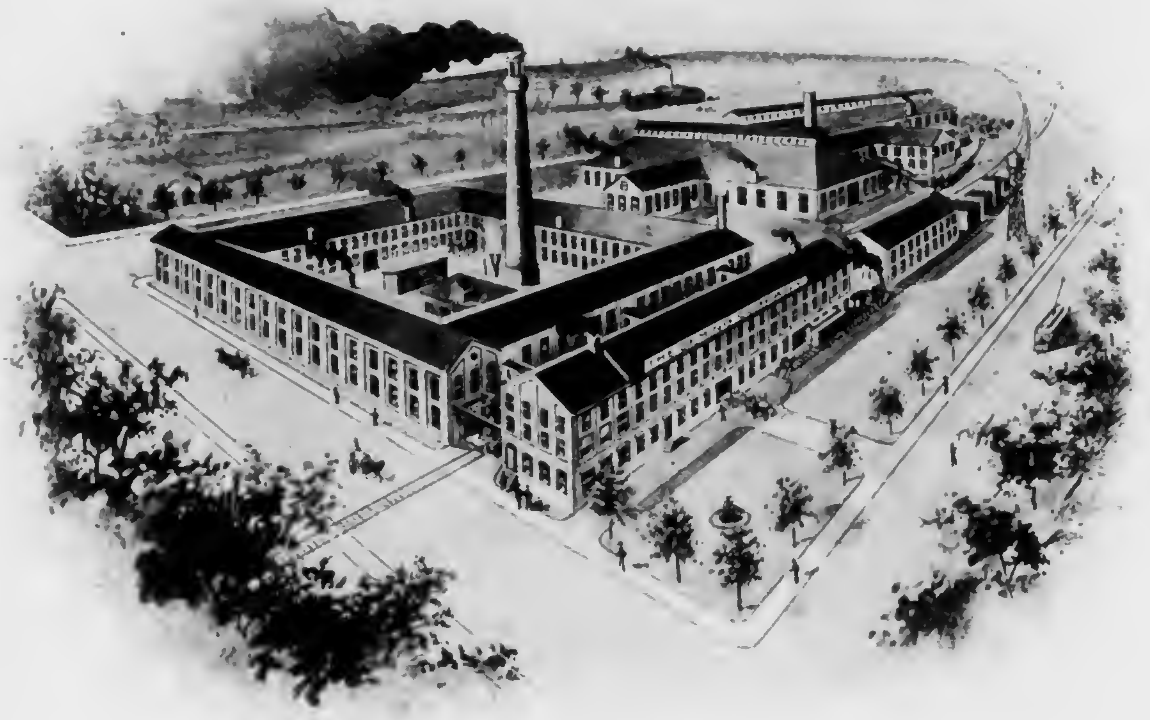
BRANCH HOUSES ABROAD:
LONDON, ENGLAND, Bell Yard, 58 City Road.
PARIS, FRANCE, 38 Rue de Flandre.
ODESSA, RUSSIA, Pollzel-Strasse, No. 21.
CAPE TOWN, SOUTH AFRICA.
MONTEVIDEO, SOUTH AMERICA.
SYDNEY, NEW SOUTH WALES.
BUENOS AYRES, SOUTH AMERICA.
MELBOURNE, VICTORIA.
BREMEN, GERMANY.
INVERCARGILL, NEW ZEALAND.

THE DEMING PUMPS.

The Deming Company, Salem, O., U. S. A., whose advertisement appears in our columns, have one of the most complete plants in the United States, or any other country, devoted to the manufacture of iron and brass pumps for hand and power, hydraulic rams, well supplies, iron and brass cylinders, etc. Their factory covers several acres, and their process of manufacture is carried on in such a systematic manner that the finished product is turned out in the highest state of perfection, whether considered from a point of design, material, or mechanical workmanship. This perfection of design, material and construction account for the title, "Deming Pumps, the World's Best."

The illustration represents a view of The Deming Company's plant, and gives an idea how convenient are their manufacturing and shipping factilities, with two railroads within a stone's throw, and receiving and shipping switches direct into various parts of their works.

In the Deming factory are made hundreds of patterns of pumps and pump fixtures.



Deming Company's Works, at Salem, Ohio, U. S. A.

Their product includes cistern, well and force pumps, windmill pumps for irrigating and general water supply; pumps, both hand and power, for domestic and factory use; horse-power pumps for irrigating; deep well power and steam pumps; triplex power pumps for water works, boiler feeding and general supply; electric driven triplex mine pumps; gasoline driven triplex pumps for railway water supply; rotary pumps for various purposes; triplex hydraulic pressure pumps; deep well power pumps for light and heavy duty, and brass cylinders for the same; bilge pumps and deck pumps, for use on vessels; air compression and vacuum pumps, both hand and power; hydraulic rams of various sizes and new design, for irrigating, domestic use and factory water supply; plumbers' engines; also spray pumps, nozzles and appliances for treating fruit trees again ravages of injurious insects. Deming pumps are sold in all parts of the world.

The Deming Company's latest complete illustrated catalogue No. 20, containing 272 pages, was issued October 1st. Attention is directed to the notice of the issuance of this catalogue in the October number of the "Export Implement Age," also to the large full-page advertisement showing specimen pages. This catalogue will be sent to importing hardware and machinery merchants on application.

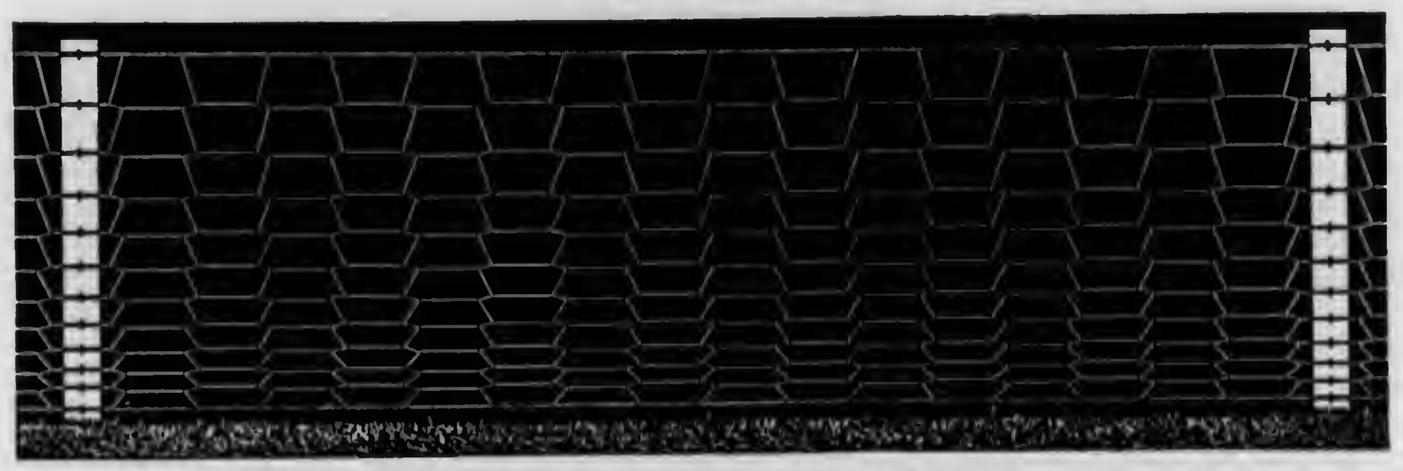
A SAMPLE OF TWENTIETH CENTURY ADVERTISING.

Here is a work of brains, of money, and of art: It is the new catalogue of the American Harrow Company, Detroit, Michigan, U. S. A., prepared by Mr. W. D. Fellows. The reading does not sound like other catalogues you have read. It says new things in a new way, and the effervescence of it all is delightful. There is not a dull sentence from cover to cover. The front design is in three colors—a very strong one. The paper is elegant; the type Cadmus with the titles in Colonial style. A profuse, though neat, line border surrounds the titles, the text and the cuts on each page in a sort of panel scheme. The cuts are fine half-tones, etchings and wood-cuts. In short, it is a catalogue to read and keep, and read again. It is strong, business-like and absorbing. People do not get tired of such things as these. The American Harrow Company is to be congratulated for its cleverness and its liberality.

KEYSTONE WOVEN WIRE FENCE CO.,
....MANUFACTURERS....

Farm,
Lawn,
Poultry
and
Railway
Fencing

Steel Gates
Ornamental
Fencing,
Fence
Stretchers,
etc., etc.



Our line of Fencing has been on the market for the past eleven years. Made of best quality of galvanized steel wire.
WORKMANSHIP FIRST-CLASS. REPUTATION UNEXCELLED.
Write for Catalogue and Prices.
4300-4400 South Adams Street, - Peoria, Illinois, U. S. A.

Pull up Your Awning!
and Let in the Sunshine of Success!

McCORMICK MACHINES ARE THE BEST IN THE WORLD
AGENCY McCORMICK BINDERS AND MOWERS

This Dealer has closed his Contract, got in his Samples and is ready for business with McCormick Machines for 1901.

A MAN WHO SELLS HARVESTING MACHINES WANTS PROFIT.
Each McCormick Machine is profitable to 2 people—the Dealer who sells it—the Farmer who buys it.
McCormick Machines are wanted—are in demand.
The McCormick Company does its own experimenting—McCormick Machines once sold, stay sold.
Dealers make biggest money selling McCormick Machines.

McCORMICK HARVESTING MACHINE CO., CHICAGO, ILLINOIS, U.S. A.

THE DARMSTADT EXPOSITION.

The Exhibits—American Implements Would Compare Favorably—An Opportunity for American Manufacturers.

In a special report of the Darmstadt, Hesse, Exposition, written expressly for "The Export Implement Age," and sent through the State Department, Mr. Walter Schumann, United States Consul, gives a most excellent account of the Exposition, and informs American manufacturers that they should exhibit at the next exposition. What he says of the German implements, as compared with the American, is given below:

DARMSTADT, September 18, 1900.

According to my promise, I beg to send you a short report on the Agricultural Exposition held at the city of Darmstadt from September 14-17 last.

The Exposition, which was confined to exhibitors of the Grand Duchy of Hesse, was opened on Friday, September 14th, at 11 o'clock A. M., by H. R. H. the Grand Duke of Hesse. The object of the Exposition was to convey an idea of the development and achievements of farming in the Grand Duchy during the past ten years or so, and to give an opportunity to compare the results obtained by the farmers, as well as to give an impetus to farming in general. Almost every section of the Grand Duchy was well represented, especially in the live-stock classes.

The farm-wagon and harness department was very poorly represented. The few wagons exhibited were clumsy affairs, and the few sets of harness very cheap looking.

If this Exposition give a fair idea of the farm wagons and harness in general use in this country (and from my personal observation I am inclined to think that it did), it would seem as though there might be a good opening for American-made farm wagons and harness, and it might pay an enterprising American firm to look into this matter more closely.

In the section for agricultural machinery and implements. American manufacturers were quite well represented, the machines of the McCormick Harvesting Co., of Chicago; Adriance, Platt & Co., of New York; D. M. Osborne & Co., of Auburn, and others, being exhibited.

While the American machines are easily distinguishable from the ultra-German machines, the German manufacturers are not slow in appreciating the superiority of our machines, and I saw a number of German machines which were evidently copied from those of American make.

The scales exhibited were also of the most primitive order. All were double platform scales, the one platform for the goods to be weighed, and the other, suspended by heavy chains, to receive the ponderous loose weights. Of course these scales are the cheapest possible in construction, nevertheless our American scales are so vastly superior in every way to these clumsy affairs, that I see no reason why American scales should not find a market in this country.

The scientific section of the Exposition was very well arranged and very instructive. All of the most modern instruments for making scientific analyses and carrying on bacteriological researches were exhibited.

As before said, the live-stock classes were well filled. Horses were well represented, the class containing about 100 entries, mostly heavy draught horses, including also a very fair exhibit of stallions from the royal stables. The classes for bulls, cows and heifers contained about 600 entries, and were good throughout. The entries in the classes for hogs numbered about 200, and comprised chiefly pure Yorkshires, and crosses between the latter and the best German breeds, such as Westphalians, Meisseners, etc. The class for sheep was very poorly represented, with only 16 entries. There were 170 entries in the classes for goats, all German breeds. The poultry classes, with 460 entries, showed some good Cochins, Brahmas, Langshans, Dorkings, Houdans, Spanish, Plymouth Rocks, Wyandottes, Andalusians, Minorcas, Leghorns and Hamburgs; also Peking, Rouen, Aylesbury and other ducks; and Emden, Toulouse and Italian geese. Turkeys were only poorly represented. Apiculture had 40 entries.

Agriculture was well represented, with 270 entries, including various kinds of wheat, rye, barley, oats, etc. In the different classes some very excellent specimens were exhibited.

Fruit culture, with 400 entries, and vegetable culture, with 200 entries, showed some excellent exhibits.

The foregoing will give you a general idea of the scope of the Exposition. I only hope that at the next Exposition American manufacturers will be represented to a larger extent, and I shall be happy if the hints given by me shall have that effect and shall tend to further American interests in the Grand Duchy of Hesse.

I should think that a permanent exhibition of agricultural implements, harness, scales, etc., in this city might promise success. If a number of manufacturers would combine in such an undertaking the expense to each individual manufacturer would be very slight, as the expense of maintaining such an exhibition would not be very large.

I shall be glad to give what information I can to any manufacturer desirous of introducing his wares in the markets of this consular district.

WALTER SCHUMANN,
U. S. Consul.

Direct correspondence between buyers abroad and manufacturers and dealers at home deserves to be encouraged. Some of the best results in exports of implements have come about in this way. The "Export Implement Age" contains the advertisements of the leading and responsible implement manufacturers of the United States. They will promptly reply to inquiries received from any quarter of the globe, concerning any implement advertised, or concerning anything it is necessary to know connected with exportation. There are also agents on the alert, at home and abroad, ready to answer questions and give information concerning American products.

THE WINDMILL AND PUMP.

Windmills, widespread as is their use, are, comparatively speaking, in their infancy. Considering the progress which has been made it is somewhat surprising that their advantages have not been more fully realized. They do more for their cost of "keep" than any device ever adopted by man. These simple, easily-constructed, and ever-ready servants are entitled to the credit of putting American agriculture upon a higher level than would have ever been otherwise possible. The tillers of the soil and raisers of stock in Europe and South America, and the dwellers in all foreign land who have to toil for their bread should turn to the windmill for aid. It works while they stand. It never asks when pay day is to come and it is a stranger to holidays.

Agents of American implements can further their interests by making special efforts to popularize this valuable adjunct to farm operations. The cost is small when compared to the work done. They are made well, and do not get out of order with ordinary use. They are simple in construction and readily repaired should repairs become necessary.

When drought comes the service of the pump is best appreciated if it has been used in the wet season to pump a supply. From 1,000 to 4,000 gallons of water per hour can be raised, according to size of pump and velocity of wind. The want of water has at all times caused serious loss somewhere. Pumps and windmills make crops sure, in fact they insure crops. They increase farm capacity, enable more stock to be raised and are a protection against disaster. The subject of windmills cannot be too earnestly considered where they are not in use.

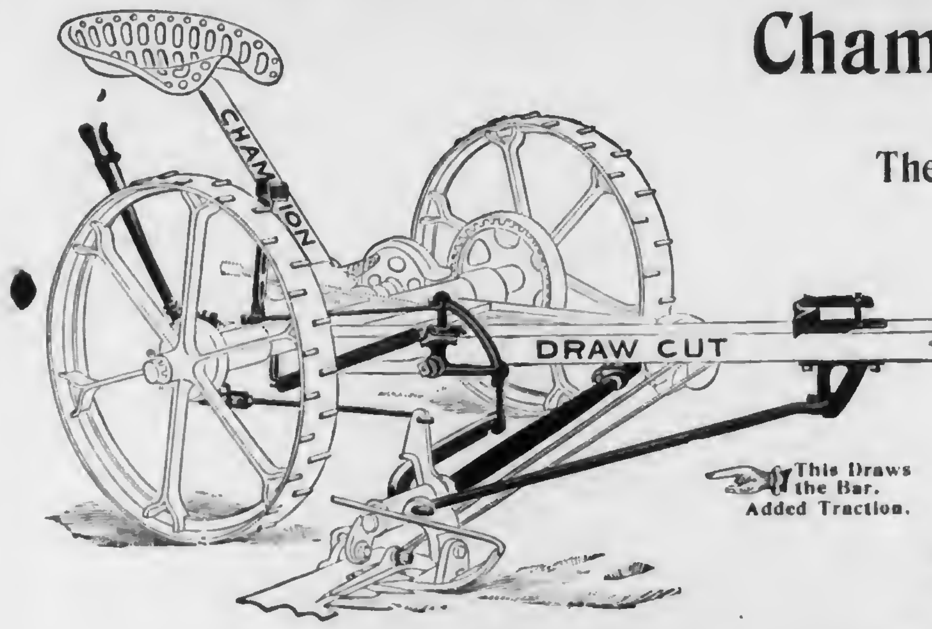
Pump literature is voluminous. The industry has become specialized, and certain American firms have achieved distinction for particular makes and for certain lines of service. There is almost as much care to be exercised in purchasing a pump as in buying a pair of shoes or a hat. The pump must be especially fitted for the particular kind of work it is designed to perform. This point is too often overlooked, and it is not always such an easy matter to decide as might appear on the surface.

The attention of European and other buyers beyond the seas is called to that important and peculiar method of American manufacturers to make a specific machine to do a specific work. This is especially true of pumps for farm purposes. The attention of our foreign readers is called to windmill pumps, artesian well barrels, hydraulic rams, pressure pumps, horse power pumps, spraying pumps, irrigating pumps and boiler-feeding pumps, as well as power pumps for all purposes. Our American makers excel the world in adaptability of power to work, and thereby secure the greatest results for the least money. Their experts are always ready to answer questions, to furnish calculations when required, and give full information and details concerning all pump work. European pump requirements promise to become an important factor in the American export trade, especially in view of the remarkable agricultural developments in nearly all foreign countries.

CHAMPION BINDERS AND MOWERS

Champion Draw Cut. IT DRAWS THE BAR. NO PUSH.

The Wheels will not lift from the ground.

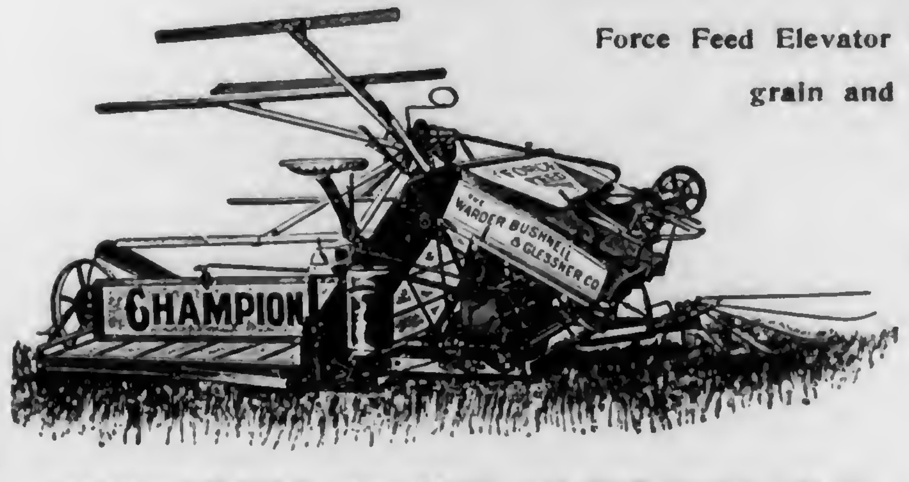

CHAMPION
DRAW CUT
This Draws the Bar. Added Traction.

The **Champion** Draw Cut Mower, though a front cut machine, has all the power and traction of a rear cut machine. On the **Champion** Draw Cut Mower the Wheels will not lift when the cutter bar comes in contact with an obstruction. It is the only Mower with an effective and practical device for lining the cutter bar with the pitman. We defy anyone to disprove these statements. Champion machines are especially strong and serviceable, and are designed to cut very close to the ground.

Champion Machines sell readily because they are modern.
They work well and give no trouble in harvest time.

CHAMPION FACTORIES at SPRINGFIELD, OHIO, U. S. A.

The largest factories in the world devoted exclusively to the making of Binders, Mowers and Reapers.

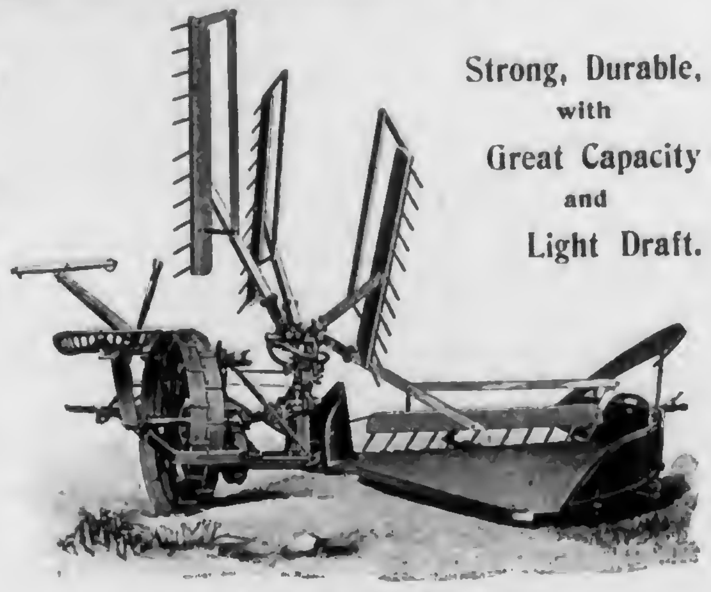


CHAMPION BINDER, made regularly with closed elevators and left hand cut, but can be furnished with open elevators and right hand cut for districts where oxen are used.

Force Feed Elevator prevents Waste of grain and choking.

Eccentric Binder Wheel gives a gain of 16⅔ per cent. in power when binding.

Strong, Durable, with Great Capacity and Light Draft.



Champion Folding Bar Reaper.

The Warder, Bushnell & Glessner Company,
MANUFACTURERS OF CHAMPION BINDERS, MOWERS AND REAPERS,
SPRINGFIELD, OHIO. - U. S. A. - CHICAGO, ILL.
LONDON OFFICE: West India House, 96 Leadenhall St., E. C., England.

QUALITY OF PRODUCT.

The establishment of agricultural implement plants in Europe may not be such a remote possibility as might be imagined. Locomotive works, car works, electrical works, and other works have been established in Europe and are paying well; why not an implement plant?

Agents of implements abroad should look far ahead and recognize what is coming, not next month, or next year ,or year after. Genuine superiority is as sure to win as the sun is sure to rise and set. Heavy things may "go" for a while, because they may stand more rough usage, but rough usage is as sure to go as that barbarism is to give place to civilization. There is no need of or excuse for rough usage. Extra weight is inexcusable simply to enable those who use it to keep on being unskillful or awkward. All unnecessary thing are sure to be pushed aside. This is the spirit of the age; it is in the air. The pocket of every buyer demands it, and we say to dealers in implements in every country on the globe to get right on this point, and do not imagine that, because customers have been accustomed for generations to unwieldy implements or heavy machinery, that they will always want weight. Mere weight, that is there because the maker has not learned the science of construction, or because the man who uses it thinks it is necessary, has already received its summons to depart and the entire world feels instinctively that America is right, that American methods are correct, and that they will ultimately prevail.

For decades past Americans were not commercial in spirit. It is only about twenty years ago that they took up seriously and systematically with the commercial idea of traveling men, and they are working it (as they do everything they take hold of) vigorously, but even commercial traveling can be overdone. The New York dry goods merchants made such discovery three or four years ago, when they organized trips of retail dealers all over the country to New York.

Deering Automobile Mower at Work in Field Near Paris, July 17th, 1900.

But Americans are now getting into line to sell more goods to Europe and all other countries, and there is a splendid and unequaled opportunity for all those commercial men in foreign lands to ride into a profitable business in introducing American implements. There are several intermediate steps to be taken before the thing can be done thoroughly. We now must have more ships, but we will soon have them. We must have ample direct banking facilities in some countries, but we are going to have them, as well as sample warehouses, and possibly have sample farms, where people can come and see things done as in the United States.

Those who are already on the ground, and others who have the spirit of American enterprise in them, and who want to ride into permanent positions of profit will find excellent opportunities. America needs a body of commercial men throughout the world, in each country, who understands the language, commercial customs, and methods of each, and who also understand America, to go forward with American determination to put American implements into every agricultural community where less efficient and less modern methods of tilling the soil may prevail. And it would be well for each company who is fortunate enough to secure such a man, to some day bring him to America, and show him our country, our factories, our methods, and our enterprise.

WHAT IMPLEMENTS HAVE DONE.

America, sometimes said to be the land of high prices, promises to ere long become the land of low prices, a fact which all our readers throughout the world should note. The reason of it and the secret of it is that we do not rely upon human labor except to make use of machinery that can do the work of many men. Though the population of the United States is only 77,000,000 its machinery does the work of ten times that many people. It is this mighty productive force that is reducing the cost of each machine, tool and implement.

Even Americans themselves do not know how much cheaper they can manufacture. Every improvement in machinery fractionally reduces the cost. There is of course a limit, but the cheaper things become the more comfortable the people are.

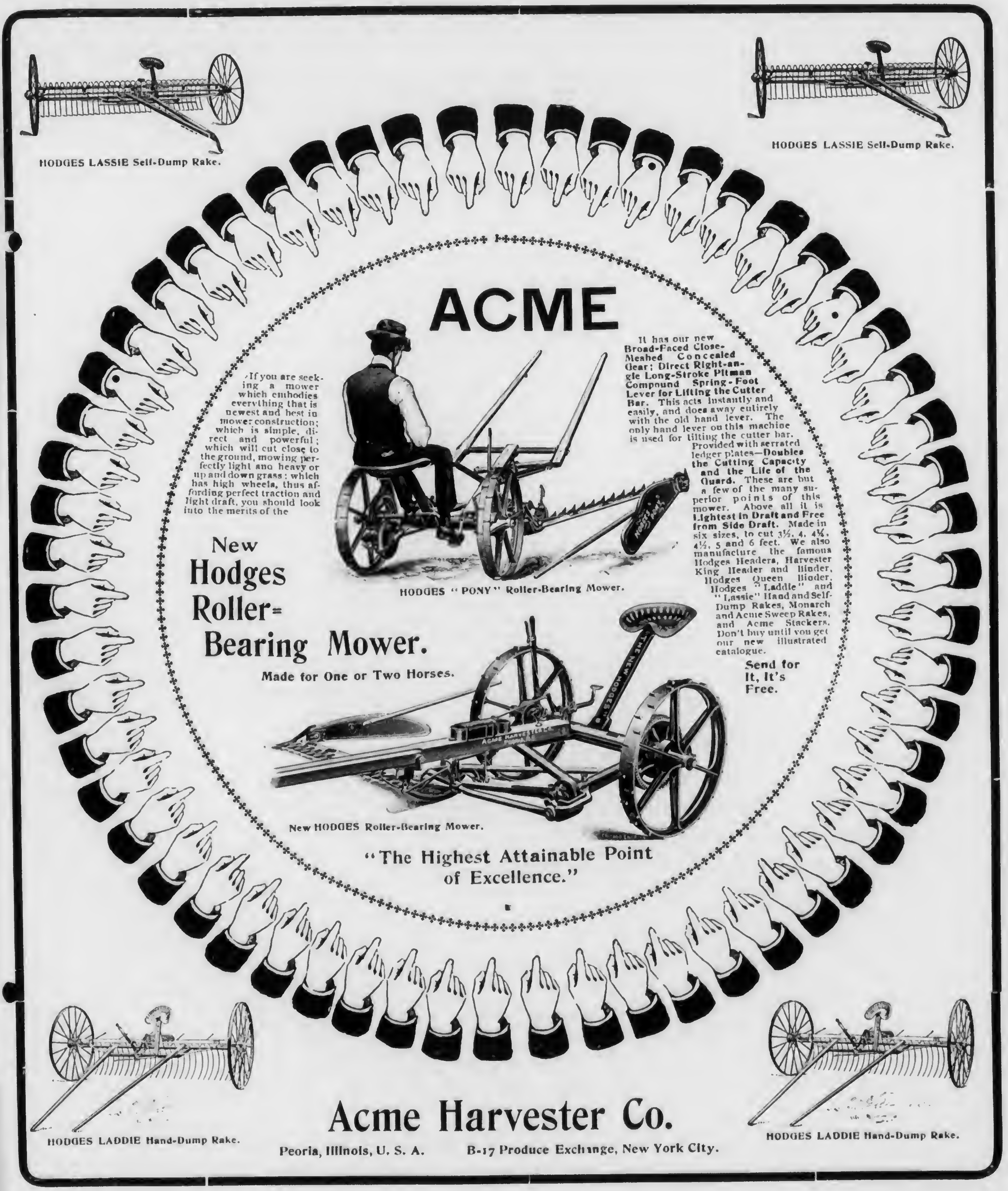
There are in the United States 6,000,000 farms and 6,000,000 farmers, who are what they are and where they are because of implements which have been gradually improved and cheapened. Twenty years ago there were only half that number.

What implements have done for the American farmer they can do for farmers in any quarter of the globe.

THE SHIPS THAT BIND THE COUNTRIES.

The Americans have addressed themselves to the problem of building enough steamships to carry their farm, shop, mine and factory products to countries throughout the world. A few years will work a transformation in international commerce. To-day ocean carrying is largely in the hands of Great Britain, and fortunate it is for us, and those to whom we sell, that Great Britain is able to serve us. But American national pride has been aroused and American capital has started American shipyards to build ships to plow the oceans of the world. An immense ship-building plant is just being completed and a contract has been placed with it to construct twelve ocean ships. The Cramp shipyard, at Phialadelphia, has 8,000 men at work in their yards. The nearby shipyards along the Delaware river are crowded with orders, and shipyards elsewhere are crowding their capacity to the utmost to turn out ships to carry to every country throughout the globe the things we have to sell.

The outcome of this development is fraught with gigantic results. National boundaries may continue, and nationalities will continue, but they will signify less and less. A world-brotherhood is developing in the hearts of men that will elevate their aims, standards, ideas, convictions, methods and aspirations. Ships are to be white-winged angles of commerce that are to carry peace throughout the world through the stimulation of industry.



HODGES LASSIE Self-Dump Rake.

HODGES LASSIE Self-Dump Rake.

ACME

If you are seeking a mower which embodies everything that is newest and best in mower construction; which is simple, direct and powerful; which will cut close to the ground, mowing perfectly light and heavy or up and down grass; which has high wheels, thus affording perfect traction and light draft, you should look into the merits of the

New Hodges Roller-Bearing Mower.

Made for One or Two Horses.

HODGES "PONY" Roller-Bearing Mower.

It has our new **Broad-Faced Close-Meshed Concealed Gear; Direct Right-angle Long-Stroke Pitman Compound Spring-Foot Lever for Lifting the Cutter Bar.** This acts instantly and easily, and does away entirely with the old hand lever. The only hand lever on this machine is used for lifting the cutter bar. Provided with serrated ledger plates—**Doubles the Cutting Capacity and the Life of the Guard.** These are but a few of the many superior points of this mower. Above all it is **Lightest in Draft and Free from Side Draft.** Made in six sizes, to cut 3½, 4, 4¼, 4½, 5 and 6 feet. We also manufacture the famous Hodges Headers, Harvester King Header and Binder, Hodges Queen Binder, Hodges "Laddie" and "Lassie" Hand and Self-Dump Rakes, Monarch and Acme Sweep Rakes, and Acme Stackers. Don't buy until you get our new illustrated catalogue.

Send for It, It's Free.

New HODGES Roller-Bearing Mower.

"The Highest Attainable Point of Excellence."

HODGES LADDIE Hand-Dump Rake.

HODGES LADDIE Hand-Dump Rake.

Acme Harvester Co.

Peoria, Illinois, U. S. A. B-17 Produce Exchange, New York City.

HARVESTING MACHINERY IN ENGLAND AND AMERICA.

Under this head a recent issue of the "Implement and Machinery Review," London, England, contains the following interesting article in approval of American machines and methods:

"Never before in the history of British agriculture has labor been so scarce at harvest time as it has been this year. Into the causes of this scarcity there is no need to enter here; they are sufficiently well known and universally regretted. Alongside with this statement it may be equally asserted—without detriment to what we write elsewhere concerning the neglect by agriculturists of the larger use of farm machinery—that the quantity of reaping machinery and of self-binders, together with horse rakes and one or two other special classes of harvesting implements employed on the crops which have been reaped during the past month, never previously bulked so considerably. This feature was noticeable in the ingathering of the hay crop, but it has been more striking in connection with the wheat harvest. The circumstance is one upon which the agricultural machinery interest is to be congratulated. There is, however, abundant room for further advances in the same direction, and those agriculturists who are slow in employing machinery will do well to refresh their memories concerning the manner in which the crops are harvested in the Western States of America. A recent contributor to this attractive topic, states that the self-binders on an American farm are drawn by from three to five horses, depending on the condition of the ground and the growth of the straw. The heavier the wheat, the more often will bundles have to be bound, and consequently, the harder will the machine be to draw. One man cares for the machine and drives the horses. The harvester cuts the grain, binds it into bundles, and securely ties it with stout string. There is a bundle carrier attached to each machine, which will hold five or six bundles exactly where the preceding set has been dumped, thus forming windrows of bundles, and materially lessening the work of the shockers. As the harvester will cut from seventy to eighty acres of grain a week, and as the entire harvesting must be done within two weeks, it will be seen that from fifteen to eighteen machines are required for each farm of 2,500 acres. When they start out to work in the morning, the first machine begins to cut a swath round the field, and the next machine follows a few yards behind; with a half-score of machines at work in one field, they cover about twelve acres of land for each mile they travel. The 'shockers' follow immediately behind the machines, putting from ten to fifteen bundles in a shock. Good workmen will make these shocks so solid that it will require a heavy wind to blow them down, and rain will not damage the grain, as the bundles are set upright, so that the straw will dry within a few hours after the rain ceases. On these big farms the grain is never stacked, but is hauled directly from the field to the steam thresher. Straw is used for fuel in the engine, and it keeps one man busy pushing it into the furnace. It is interesting, too, to learn that the increased value of America's agricultural crops, of all sorts last year, compared with four years previously, is estimated at no less than $322,000,000. In round figures the advance was from $545,000,000 to over $629,000,000, or 16 per cent., for maize; from $237,939,000 to $319,545,000, or 34 per cent., for wheat; from $163,655,000 to $198,168,000, or 16 per cent., for oats; and from $12,000,000 to $24,000,000, or 100 per cent., for flax. Wheat covered over 10,000,000 acres more in 1899 than in 1895."

Too much Maize for His Barn.

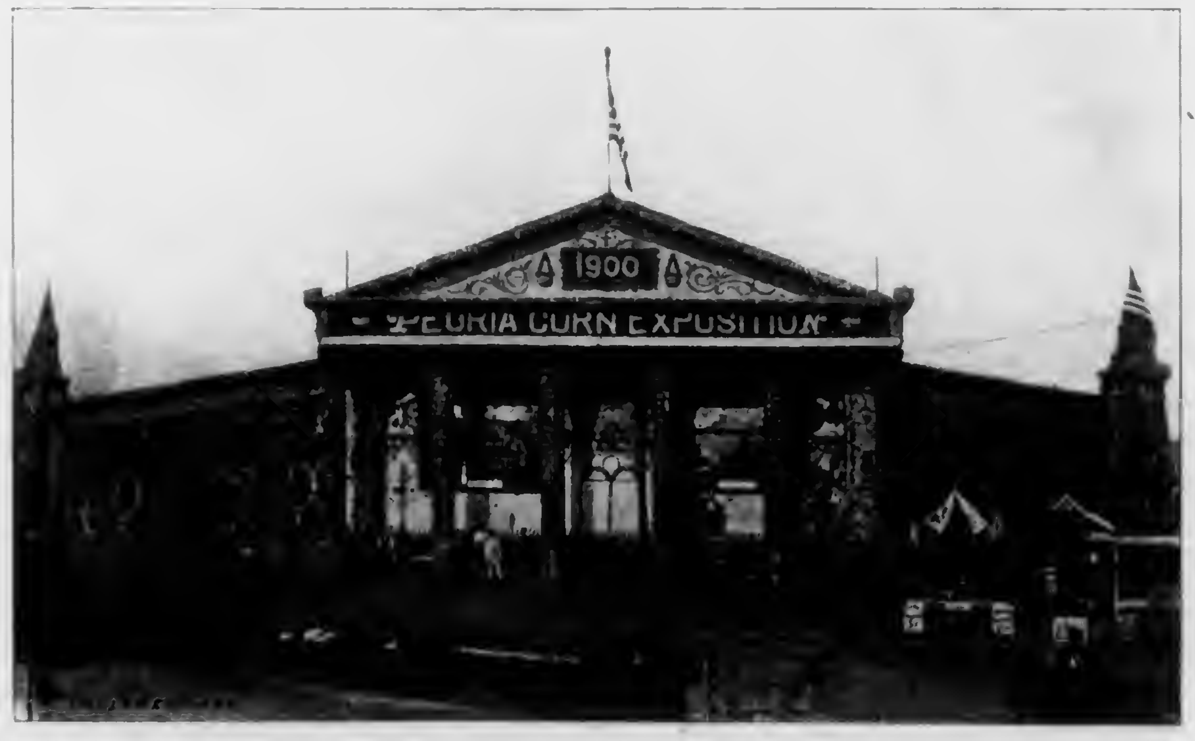
MAIZE PALACE.

At Peoria, Ill., U. S. A., a Maize Carnival began on October 3d, continuing ten days. It was largely attended from all sections of the United States.

Street decorations were of the highest type. Business men seemed to vie with each other in the production of the most artistic and fascinating effects, while the Corn Palace in architectural design was superb, presenting a solid mass of corn decoration of richly blended colors, and when viewed from the Hamilton street entrance formed a scene of rare beauty that made a lasting impression upon the beholder. Thousands of strangers thronged the streets of Peoria, feasting their eyes on the many rich designs made of corn, as well as studying the best methods of producing the best and highest type of this cereal, and the many by-products capable of being produced from it.

The interior decorations of the Corn Palace were made up largely of exhibits of the various railroads of the State of Illinois. The Glueose Sugar Refining Co. had an interesting exhibit, showing some forty of the by-products of corn, among which may be mentioned sugar, starch, feed, corn oil, oil cake and rubber substitute, the last named being a vulcanized form of corn oil, which when added to rubber renders it more pliable, as well as adding materially to its durability.

Another interesting exhibit, and one which was of particular value to the corn growers, was that of the Illinois State University, showing the results of experiments made in the growing of corn at that institution, also a collection of the insects that destroy the young plant and the means of exterminating them.



Maize Palace, Peoria, Ill., U.S. A.

CHINA AND IMPLEMENTS.

Exporters in England who are friendly to American implements are watching the progress of events in China with more than ordinary interest. Shanghai merchants think, as do English exporters, that for small agricultural devices there will soon develop enough business to warrant looking after it. The Shanghai merchants state that in their opinion exclusively hand methods are destined to disappear from China where labor has been for ages a drug. Our readers in Australia and on the Pacific Coast are watching the Orient. The Japanese have suddenly become an industrial power, and land there is now being tilled on American methods. Dense as is the Chinese population there is room for the adoption of American labor-aiding appliances, and there will soon be evidences of a demand in that direction.

Catalogue No. 20, issued October 1st by the Deming Co., Salem, O., is a complete and comprehensive catalogue comprising 272 pages and showing a full line of pumps of every style and for every purpose. No dealer should be without this book as it contains about everything in the pump line that can be inquired about.

In the United States all animals are fed on maize and oats. Maize is used for human food more than oats or rye. Wheat is not only largely used but much of the crop is shipped to other countries.

" Dans un concours avec douze autres faucheuses sur le plus vaste domaine des États-Unis, ayant une étendue de 266,000 acres, la faucheuse à chainette "Jones" a remporté le premier prix, ayant été jugée la meilleure au point de vue de la légèreté du tirage et de la perfection du travail." *R. M. Pogson, Te Jon Rancho's, Cal.*

LIEUSES
FAUCHEUSES
MOISSONNEUSES
COUPEUSES D'ÉPIS
RÂTEAUX À FOIN
RÉMOULEUSES
DE FAUCILLES
PLANO
À MOTION LEGERÉ.

Les machines le plus simplifiées et les plus parfaites au monde pour faire la récolte.

ONT
REMPORTÉ
LES
HONNEURS
DE 99.

Des milliers de négociants actifs et eveillés ont, par la vente de ces machines, doublé et triplé leur chiffre d'affaires dans les saisons de 98 et 99. Vous doublerez le vôtre en 1900.

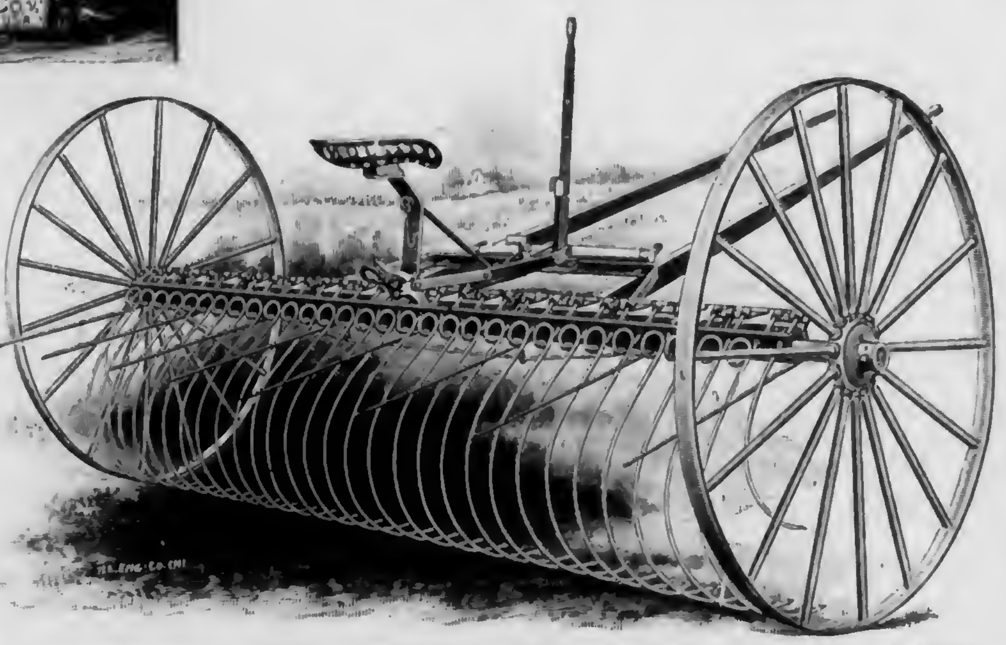
La Lieuse basculaire "Jones" est le triomphe reconnu de l'époque.

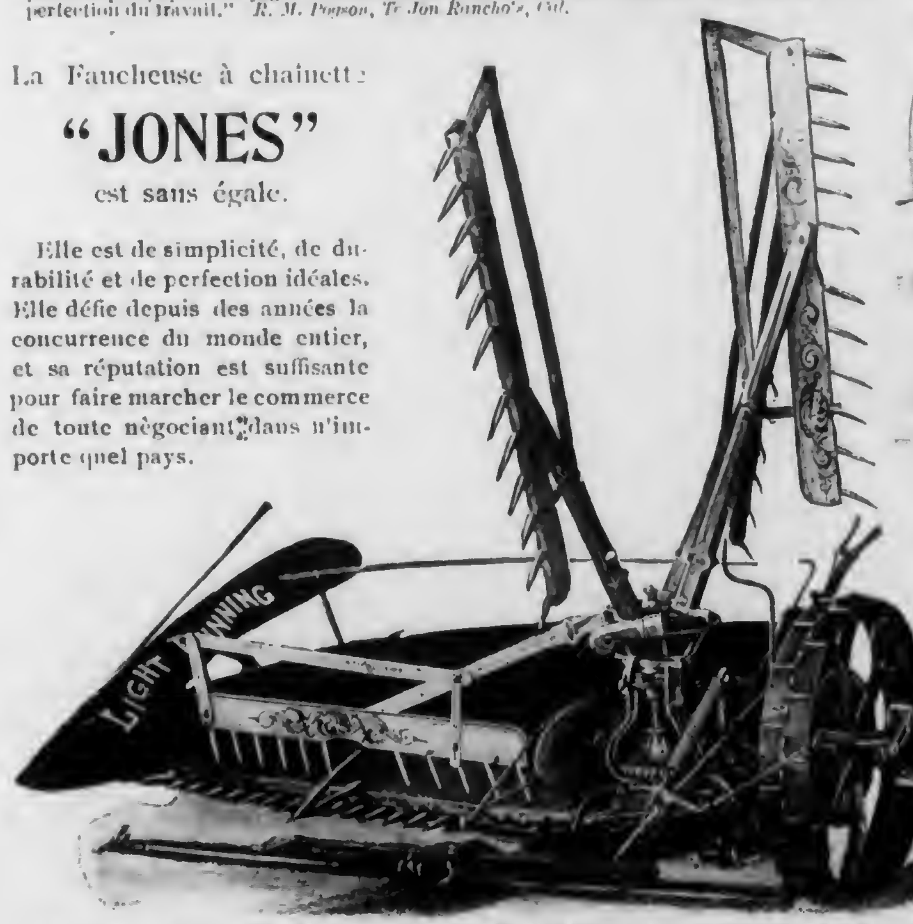
La Faucheuse à chainette

"JONES"

est sans égale.

Elle est de simplicité, de durabilité et de perfection idéales. Elle défie depuis des années la concurrence du monde entier, et sa réputation est suffisante pour faire marcher le commerce de toute négociant dans n'importe quel pays.


Le Râteau à Foin ajustable "Jones" n'a pas d'égal comme travailleur et article vente rapide. Le seul Râteau à Foin ajustable au monde.



La Moissonneuse "Jones" est la plus parfaitement ajustable de toutes les moissonneuses et la seule munie d'un balancier à ressort.

* * *

Ecrire pour Catalogue Descriptif.

* * *

The Plano MANUFACTURING COMPANY
CHICAGO, ILL.,
États-Unis d'Amerique.
115 Southwark Street, • LONDON, S. E., ENGLAND.

ADRIANCE, PLATT & CO.

Early in the preparation of the plans of the American Commission to the Paris Exposition of 1900 it became evident that the space allotted to Harvesting Machinery, Class 35, Group VII, would be entirely inadequate for anything like a representative display of the American manufacturers; indeed, it is probable that any two of them would have been glad to have filled the entire space. How to fit satisfactory exhibits to the very limited spaces assigned became a problem for the manufacturers, and one which, in general consensus of opinion, Adriance, Platt & Co., of Poughkeepsie, N. Y., solved most successfully.

Instead of crowding their space with a great variety of machines, they limited their exhibit of full-size machines to two of the most generally representative for European trade, and displayed a long line of other machines adapted for various localities in beautiful miniature working models, detailed reproductions of the actual machines.

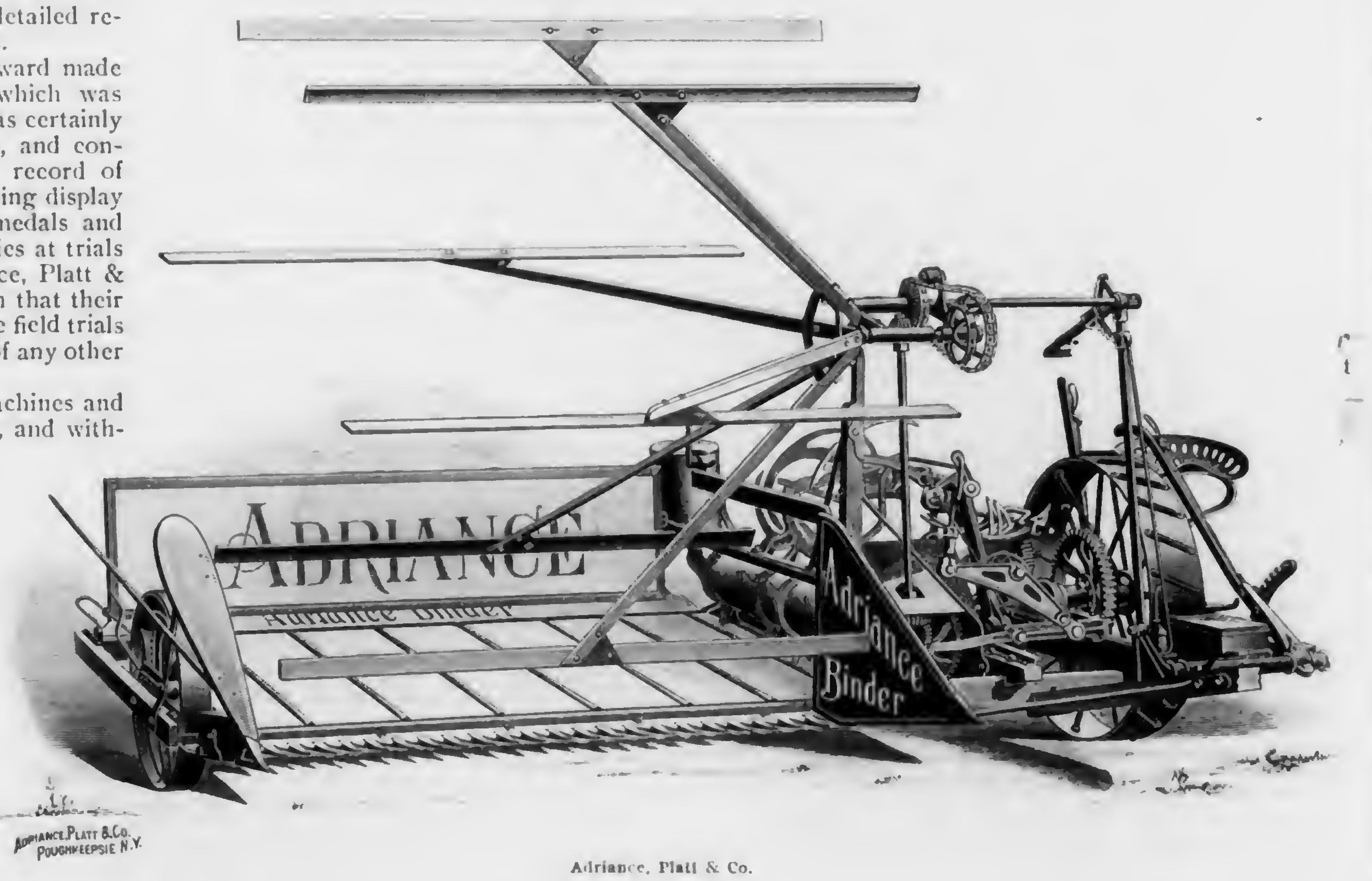
The Grand Prix, the highest award made to any exhibitor in their class, which was given to Adriance, Platt & Co., was certainly a well-earned and merited honor, and continued unbroken their victorious record of preceding World Fairs. The striking display of hundreds of gold and other medals and trophies recalled their field victories at trials in all parts of the world. Adriance, Platt & Co. are justly proud of their claim that their machines have won more first State field trials in Europe during 1900 than those of any other manufacturer.

Not only were the exhibited machines and models most beautifully prepared, and without concealing their commercial construction and appearance, but in each was also evident all the niceties of experienced manufacture, which has enabled this company to meet every want of Europe's varied harvest fields with machines peculiarly adapted thereto.

In the construction of machines they have always taken particular care that designs shall be simple as well as correct mechanically, embodying only reliable devices, susceptible, when worn, to adjustment and the ready substitution of new parts, with the possible displacement of other parts. In this connection was explained a surprisingly simple system, which we believe to be peculiarly their own, in the record of changes made from time to time, by which any purchaser was insured a prompt and correct supply of any piece which he might desire for a worn machine of any age.

Of the full size machines exhibited the Adriance Buckeye mower embodies the essential features brought out in 1858 by the late Mr. John P. Adriance, of this company, and which made the mowing machine a fully successful innovation and obtained for it its first popularity with agriculturists. The principles introduced in this machine have proven to be right, and it became the model about which many other machines have centered. In the Swiss Village attached to the Exposition must have been noticed side by side one of the Adriance Buckeye mowers of 1858 and one of the build of 1900, most clearly illustrating the permanency of the original principles and the advancement in construction and development of minor features of utility, producing the perfect machine exhibited.

The second full-size machine was the Adriance binder, of which we publish an illustration. Introduced by the company in 1888, it was a marked departure from any other machine constructed for the same purpose—claimed to be lighter, simpler, more compact and portable, and performing its work with far less expenditure of power, both in cutting, handling and delivering the grain. This machine very early became a great favorite throughout Europe, and still holds high rank, although other types of machines have since succeeded in approaching it somewhat in its light construction and ease of handling. The principal model in this firm's exhibit represents such a machine.



Adriance, Platt & Co.

This beautiful model of what is known to the trade as the elevator type of binder is undoubtedly the only one ever made on so small a scale in which every operation, even to the knot-tying mechanism, is perfect and capable of performing its full function. Every one of the various models in this exhibit is worthy of special description, if space permitted.

Adriance, Platt & Co., as is generally well known, were among the pioneers in the introduction of harvesting machinery. Some members of the company were identified with the business as early as 1853; the present business was estabished in 1855, and the course of the company has been one of unbroken success.

With offices in the city of New York, Adriance, Platt & Co. very early directed their attention to the possibilities of export trade, upon which they promptly entered, and the growth of which constrained them to early establish their own foreign offices for the greater accommodation of that trade. The first European office was opened in 1871. In 1872 they established in Bremen, and later, removing that office to Hamburg, they opened an additional office in Paris. In 1882 the European sales were placed in charge of Mr. F. Mink, who directs the office at Paris, Quai Valmy, 159; and at Hamburg, "Artushof."

Although Adriance, Platt & Co. have given careful attention to foreign trade, and have been enabled to design and manufacture one of the most complete lines of machinery adapted to European wants, they have also conducted a large home trade.

The works are situated a short distance above the great port of New York, on the east bank of the magnificent Hudson river, having thus on one side of their plant a world's waterway, while on the other side it extends to the tracks of the New York Central, the great four-track trunk line of America's colossal railway system, giving unequaled shipping facilities.

Adriance, Platt & Co. have, throughout their career, followed rather closely the conservative lines adopted by the founders of the company, and the various enlargements of their works have never been made on the enthusiasm of a single exceptionally prosperous season, but have been the normal increase required by fully-established demands.

Additions to the works, bringing them to their present large proportions, have been accompanied by all possible rearrangement for and the introduction of the most modern methods of manufacture, new methods as well as new buildings playing as important a part in increased output, and at the same time perfecting the interchangeable part system of manufacture, the importance of which is so fully understood by dealers and users of machines in countries foreign to their origin.

WATCH OUR SMOKE
IN 1901
THE MAMMOTH CHIMNEY JUST ERECTED AT THE
DEERING FACTORY IS 268 FEET HIGH, 40 FEET SQUARE
AT THE BASE, 76 FEET IN CIRCUMFERENCE AT TOP

With the chimney have been installed three 2500 horse-power engines, this increase in power being made necessary by the enormous demand for

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HARVESTING MACHINERY,

and we are now prepared for the coming year, which we expect will be the greatest business year of our existence. Agents can sell and warrant our

Deering Ideal Binders
Deering Ideal Mowers
Deering Ideal Reapers
Deering Hay Rakes

"Watch Our Smoke"

and remember

"IT PAYS TO BE A
DEERING AGENT."

Cette gravure représente la nouvelle cheminée mammouth des usines ***Deering;*** elle a une hauteur de 82 mètres; 12 mètres carrés à la base et une circonférence de 23 mètres au sommet.

Les ordres fabuleux reçus pour les Machines à Récolter, à traction légère, de Deering, nous ont obligés d'agrandir notre usine pour la transmission de la force et nous sommes maintenant admirablement équipés pour l'année prochaine, qui, croyons nous, sera, au point de vue des affaires, la plus grande depuis notre existence.

Les Lieuses, les Faucheuses, les Moissonneuses et les Râteaux ***Deering*** sont des Machines qui peuvent être vendues et garanties.

Diese Abbildung illustriert den neuen Riesenschornstein der Deeringschen Fabrik, welcher circa 87 Meter Höhe, circa 3.72 centrar am Fundament und circa 23.5 Meter im Umfang am Obenrand misst.

Die enorme Nachfrage nach ***Deeringschen Erntemaschinen leichten Zuges*** hat uns gezwungen unsere Betriebsanlage zu ver grössern und wir sind nun auf bemerkenswerthe Weise vorbereitet den Anspriichen des kommenden Jahres zu genügen, von dem wir das grösste geschäftliche Resultat seit unserem Bestehen erwarten.

Deerings Garbenbinder, Grassmäher, Getreidemäher und Heurechen sind Machinen, welche verkauft und garantirt werden können.

"Man achte auf unseren Rauch" and sei der Thatsache eingedenkt, dass "es sich lohn tein Agent für Deering zu sein."

DEERING HARVESTER CO.,

(A COPARTNERSHIP.)

CHICAGO, U. S. A.

OLD PLOWS AND NEW.

No work can be successfully or easily done unless the worker understands his business. He must know not only "how to do it," but why his method is the right one. He must so understand his tools that when they do not obey him he will know where the difficulty lies and be able to remedy the defect. The reputation of many an invention has been ruined by a lack of knowledge or through ignorance of the user. The farmer is a worker, and one of his most useful tools on the farm is the plow. Mr. J. G. Ransom, an American implement man, says: "Let me ask for what class of people has the untiring and inventive genius of our American workmen toiled so incessantly, late and early, to produce labor-saving machinery to lighten the burden of toil as for the farmer? I say none. Not only the old but the middle-aged farmer has witnessed during his lifetime almost a complete revolution in farm machinery, and no tool or machinery has been improved more than the plow. When I first went into the agricultural business, late in the sixties, but few makes of plows were used, and these were made by local manufacturers. The moldboard landsides and points were made of common cast iron, and not even ground or polished, and by the time the soil had removed the roughness they were worn out. During the early part of the seventies, a chilled plow made its appearance in this vicinity, made by a patent process, the moldboards being made by a process called a hot-water back chill. The metal seemed to stand on edge and was so hard that it could not be filed or drilled, and, no matter how rusty it became, by running it through the ground for three or four rods, it was made as bright as a looking glass. Hundreds were sold upon trial, and this style of plow jumped into popular favor, and now at this date it is almost an impossibility to sell a plow unless it has a moldboard as above described. The sulky plow is comparatively a modern invention and has been sold and used in this section, for some five or six years; they do not have more draft than an ordinary walking plow, turning the same furrow, and will do better work. They will turn a furrow in hard or tough soil, where a walking plow fails, and can be operated successfully by a youth ten years of age, an old man or one who has had the misfortune to lose an arm or limb, and I have even seen able-bodied men who seem to be more partial to riding than walking, and seem to be of the same opinion as our late lamented Artemus Ward, who said he "preferred to earn his bread by the sweat of someone else's brow." The plow can be operated from the driver's seat by levers (easily handled) in order to plow deep or shallow, and also to level up, and will make perfectly square corners. Any one of very ordinary intelligence can manage them successfully."

POTATO MACHINERY.

More attention has of late years been paid to the raising of potatoes in Europe than formerly, but old hand methods too generally prevail. Those European agents who have been calling attention to American potato machinery should not be discouraged at the conservatism displayed in taking up with new ideas. Even here in America the pioneers of the agricultural implement trade can point to their difficulties in introducing labor and time-saving devices which would bring a smile to the faces of men to-day. Our American potato machinery for cutting, planting, cultivating and harvesting can do everything a potato grower wants done, except to cook and eat it. It leaves those things for others. Agents abroad can, by persistent action, build up a valuable business in the potato machinery line. The price of an outfit is within the means of every small farmer, and with such aid the area cultivated can be largely increased.

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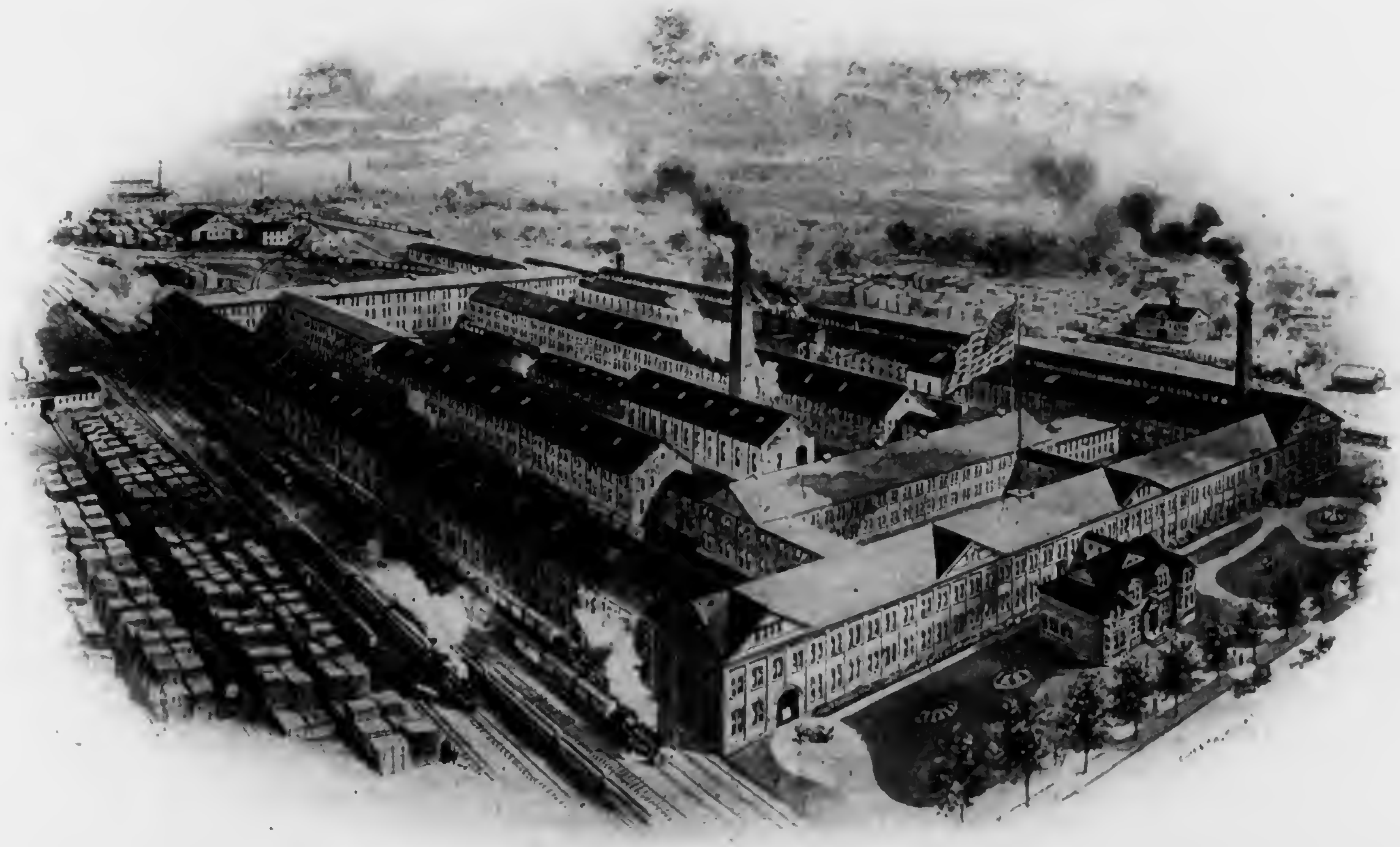

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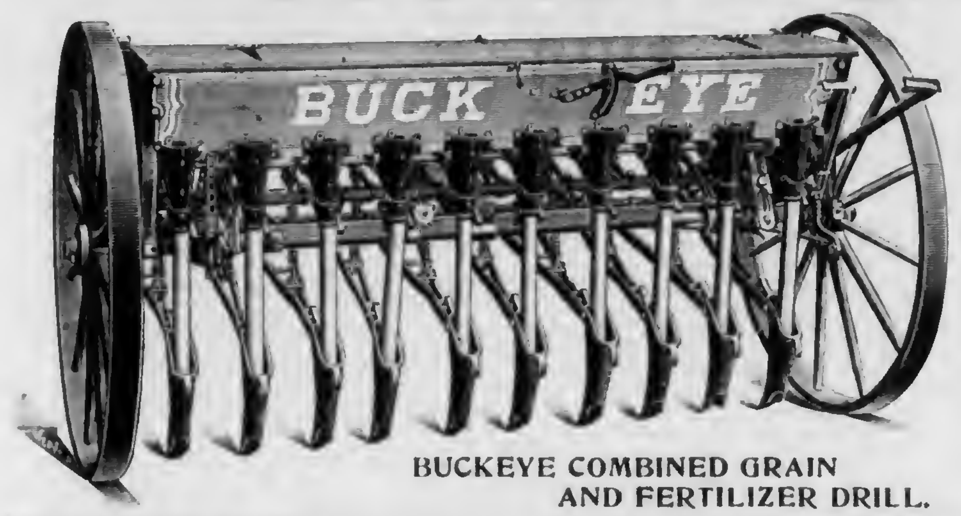

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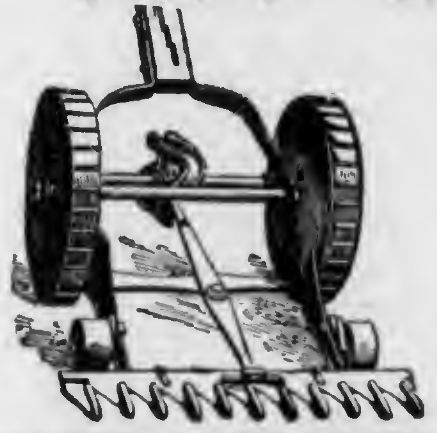

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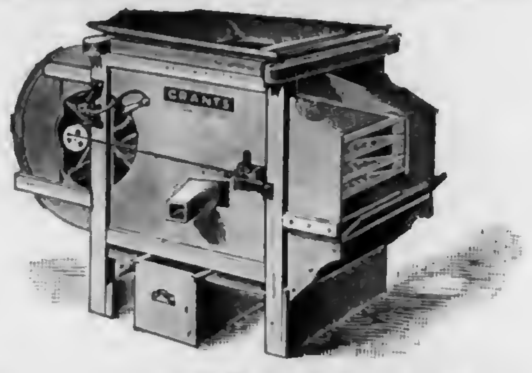

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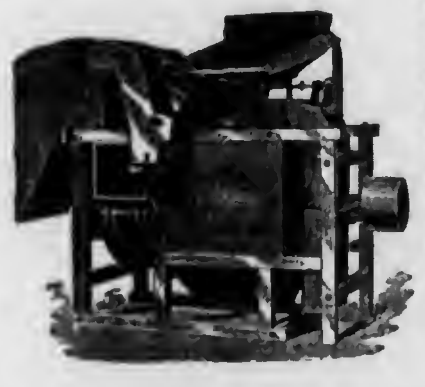

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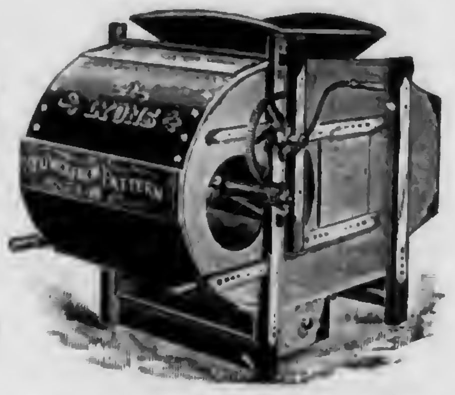

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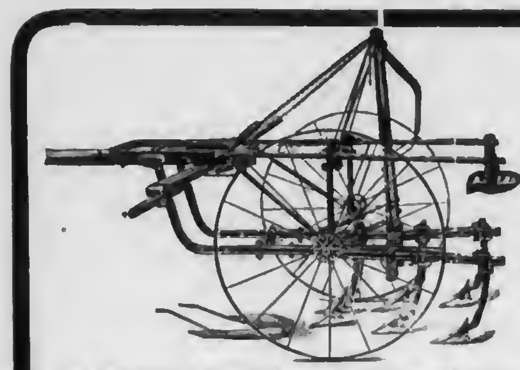
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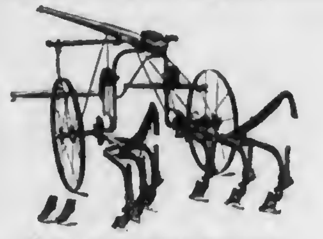
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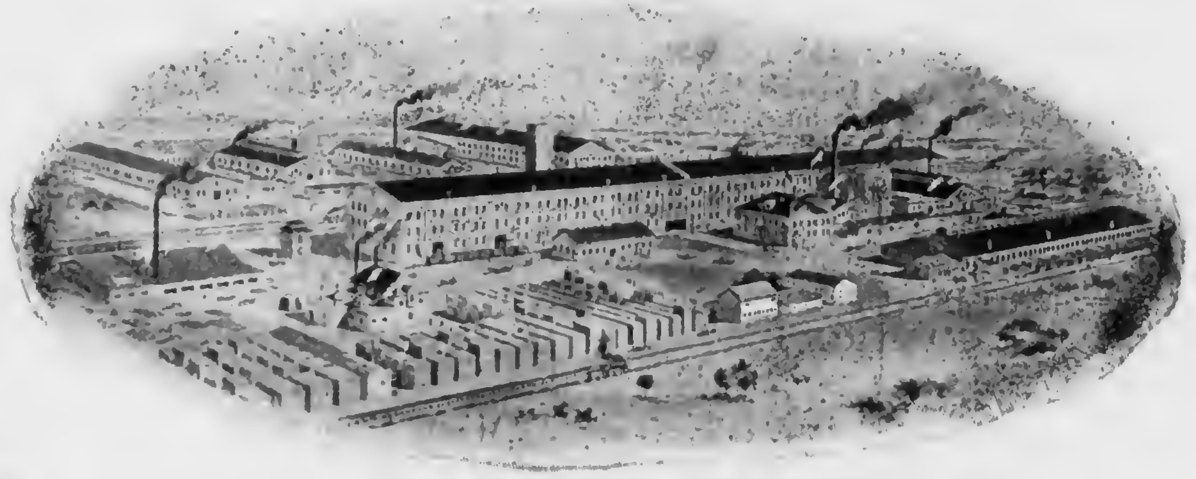
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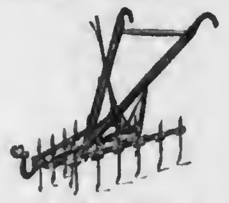
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A New Complete Catalogue, embracing all goods manufactured by us, will be issued in the Spring of 19[illegible].

DEMING PUMPS are known as "**The World's Best.**" They received highest award at World's Fair, Chicago, 1893, and at the National Export Exposition, Philadelphia, 1899.

THE DEMING COMPANY,

Manufacturers of Pumps and Hydraulic Machinery

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NEW YORK OFFICE, 56 and 58 Pine St. Orders may be placed through your New York buyer, who can furnish catalogues and prices on application

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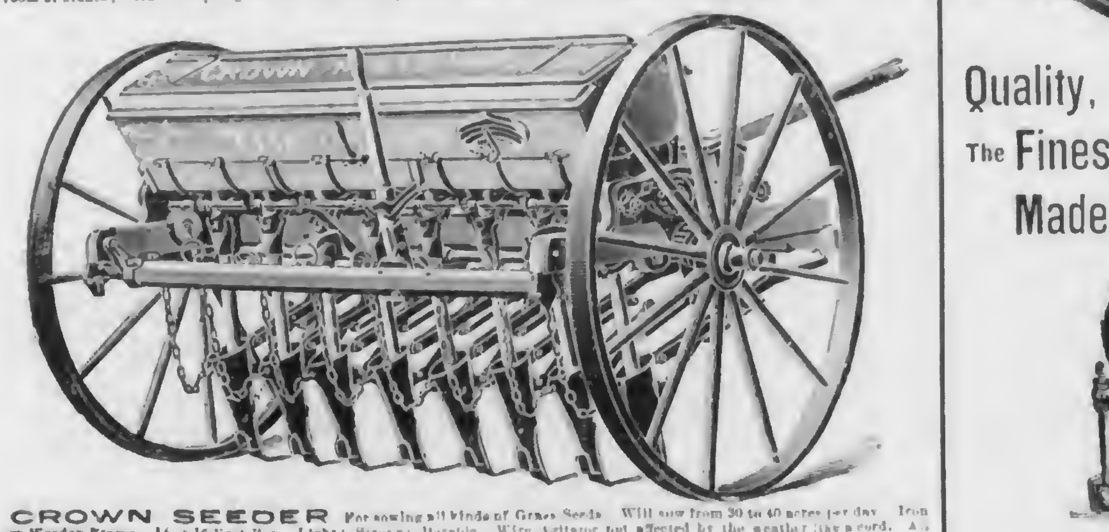
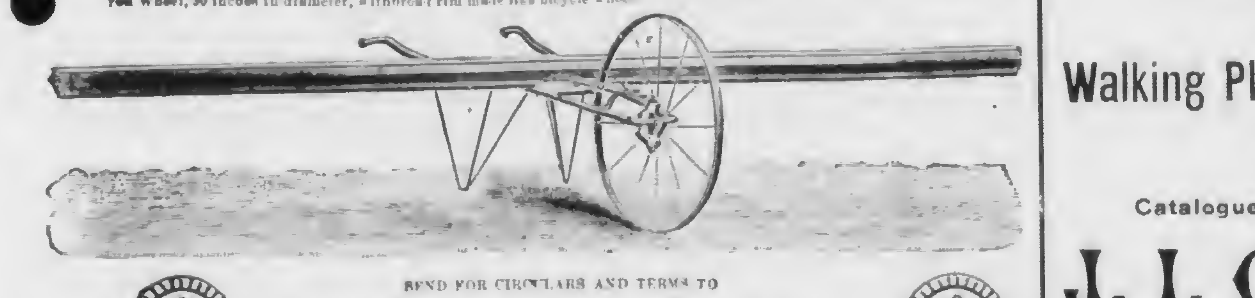
CROWN DRILL Absolute Positive Force Feed for Grain, Grass Seed and Fertilizer. Grain Feed Wheels are bell-shaped, giving the actual capacity. Will sow Kidney Beans, Dent Corn, Southern Corn and Oats, or Beet Seed without cracking or breaking; no Extra Attachments required to plant Corn. It has [illegible] by a Lever [illegible] Pounds, Bushels or Fractions thereof [illegible] Can distribute damp or [illegible] Phosphates, for [illegible] by a simple change. Has a perfect, self-acting Spring Hoe with double reversible Steel Points, no stopping for rocks, stumps, roots or stones; with this Spring Hoe the teeth can be pitched to sow deep or shallow without moving a bolt.



CROWN SEEDER For sowing all kinds of Grass Seeds. Will sow from 30 to 40 acres per day. Iron or Wooden Frame. 14 or 16 Foot Box. Light; Strong; Durable. Wire Agitator not affected by the weather like a cord. An Iron Wheel, 30 inches in diameter, with broad rim made like bicycle wheel.



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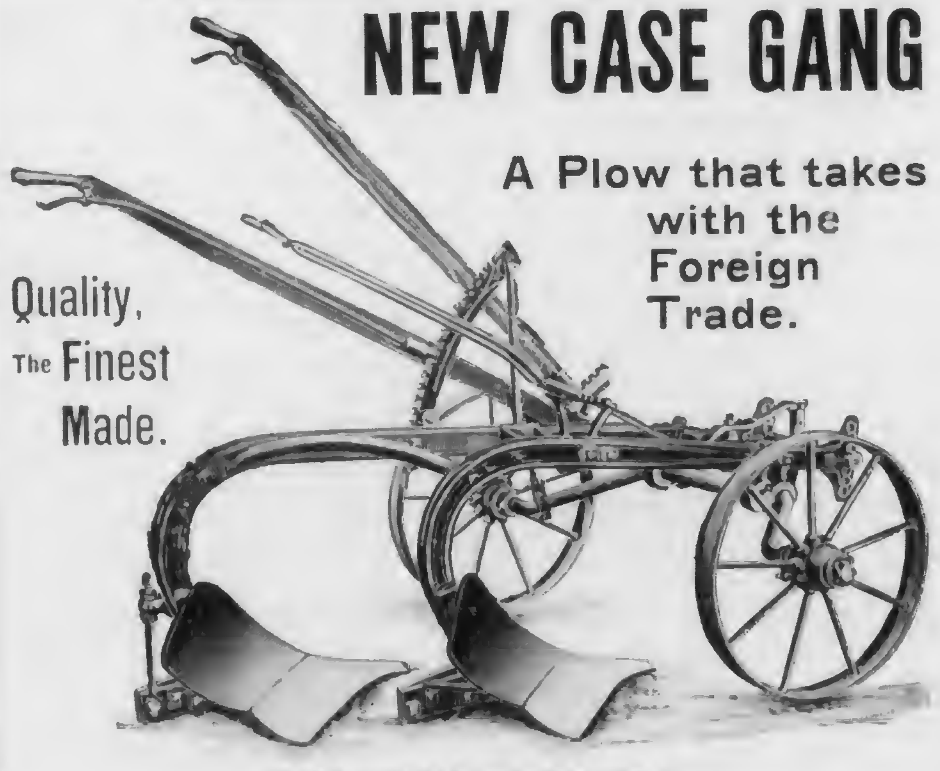
NEW CASE GANG

A Plow that takes with the Foreign Trade.

Quality, The Finest Made.



We also make a complete line of

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Harrows Disc, Lever and Spike-Tooth.

Catalogue and full information free on application. Address,

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Sharples Cream Separators

Universally used by thousands of America's Leading Dairymen.

The Sharples Tubular Cream Separators

represent the last greatest stride in improved cream separator construction.

Simple, Durable, Effective. Small Power--Large Capacity
Absolutely Safe--Handsomely Finished.
"The Bowl Alone Revolves."

A Complete Line of Dairy and Factory Sizes for Export.

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EL MEJOR SEPARADOR DE CREMA DEL MUNDO.

Separadores de Crema "Sharples"

universalmente usados por millares de lecheros de alta categoría en los Estados Unidos. Los Separadores Tubulares de Crema "Sharples" representan el mayor progreso en la construcción perfeccionada de separadores de crema. Sencillos, duraderos, eficaces. Poca fuerza motriz—mucho resultado. Perfectamente seguros—finamente concluidos. "La bola unicamente gira." Completo surtido de tamaños para lecherías y fábricas, para la exportación. Dirección cablegráfica:

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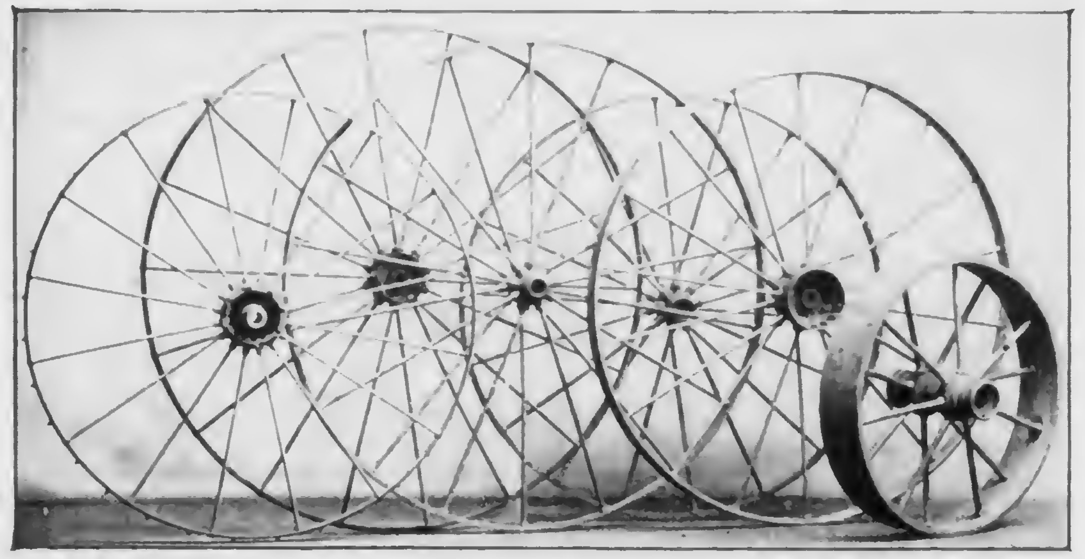

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Capacity over 150 tons finished wheels per day.

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A MONTHLY MAGAZINE DEVOTED EXCLUSIVELY TO THE EXPORT TRADE IN AGRICULTURAL MACHINERY, PUMPS, WIND MILLS, DAIRY SUPPLIES AND HARDWARE SPECIALTIES.

PHILADELPHIA, PA., U.S.A.

[illegible] DECEMBER, 1900.

THE BUCHER & GIBBS PLOW CO., CANTON, OHIO, U. S. A.

EXPORT OFFICE:
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Produce Exchange,
New York City,
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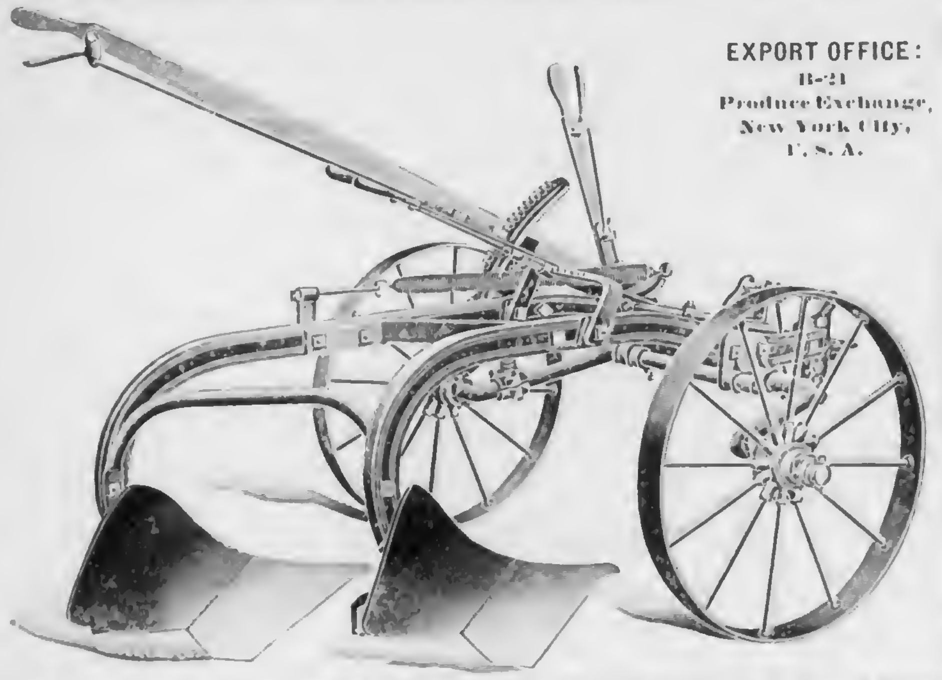
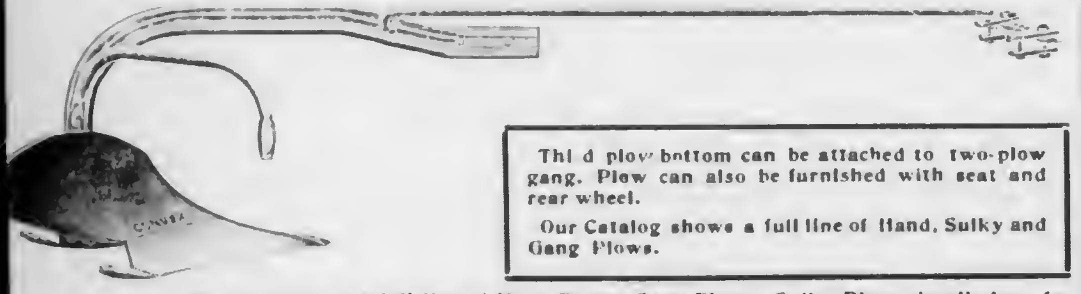


The above cut represents the IMPERIAL CONVEX WALKING GANG, Moldboard View.



Third plow bottom can be attached to two-plow gang. Plow can also be furnished with seat and rear wheel.

Our Catalog shows a full line of Hand, Sulky and Gang Plows.

We manufacture a full line of Hand Plows, Gang Plows, Sulky Plows, in all sizes, for all conditions of soil. Also One-Horse Cultivators, Land Rollers, Spike-Tooth, Spring-Tooth and Disc Harrows, Beet Diggers and Cultivators. CATALOG WILL BE MAILED UPON APPLICATION.

F. E. MYERS AND BRO ASHLAND O. U·S·A

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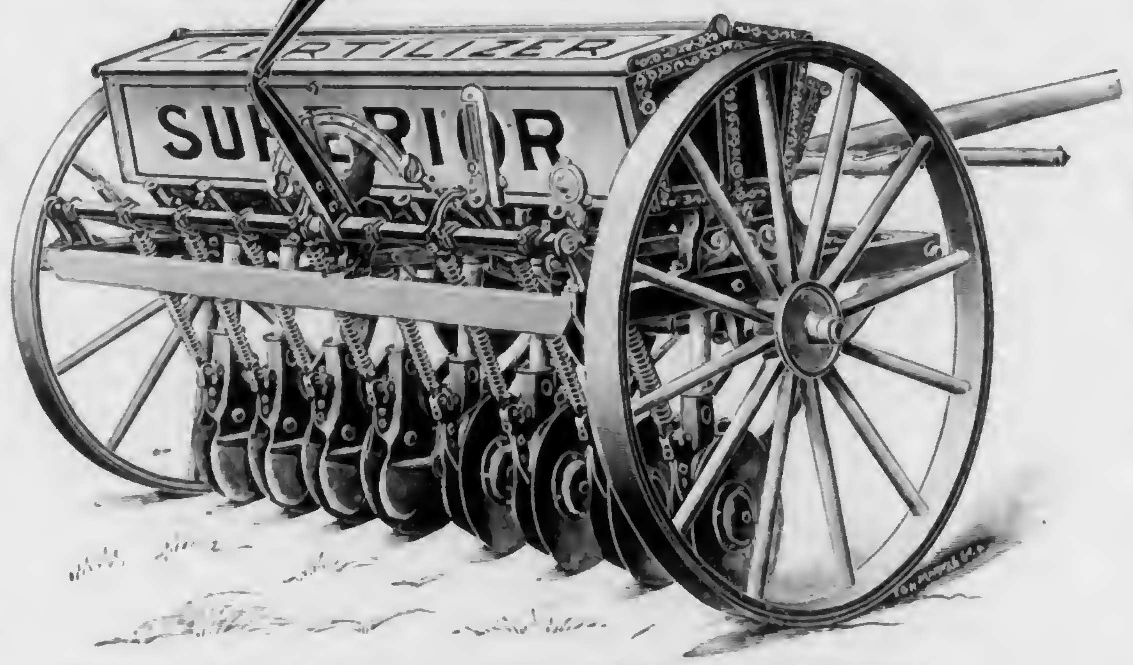

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Drills with or without Fertilizer Attachment.

Disc Drills,
Hoe Drills,
Shoe Drills,
Beet Drills,
Broadcast Sowers.

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Complete Line of Highest Grade Seeding Machines.

"Superior" Drills are used with success in every wheat growing section of the world.

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Nos semoirs à houe et à disque se fabriquent dans toutes les grandeurs.
Unsere Hacken- und Scheiben-Drillmaschinen werden in allen Grössen angefertigt.
Nuestras Sembradoras de azada y de disco se fabrican en todos tamaños.

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ALSO **Threshers and Cleaners.**

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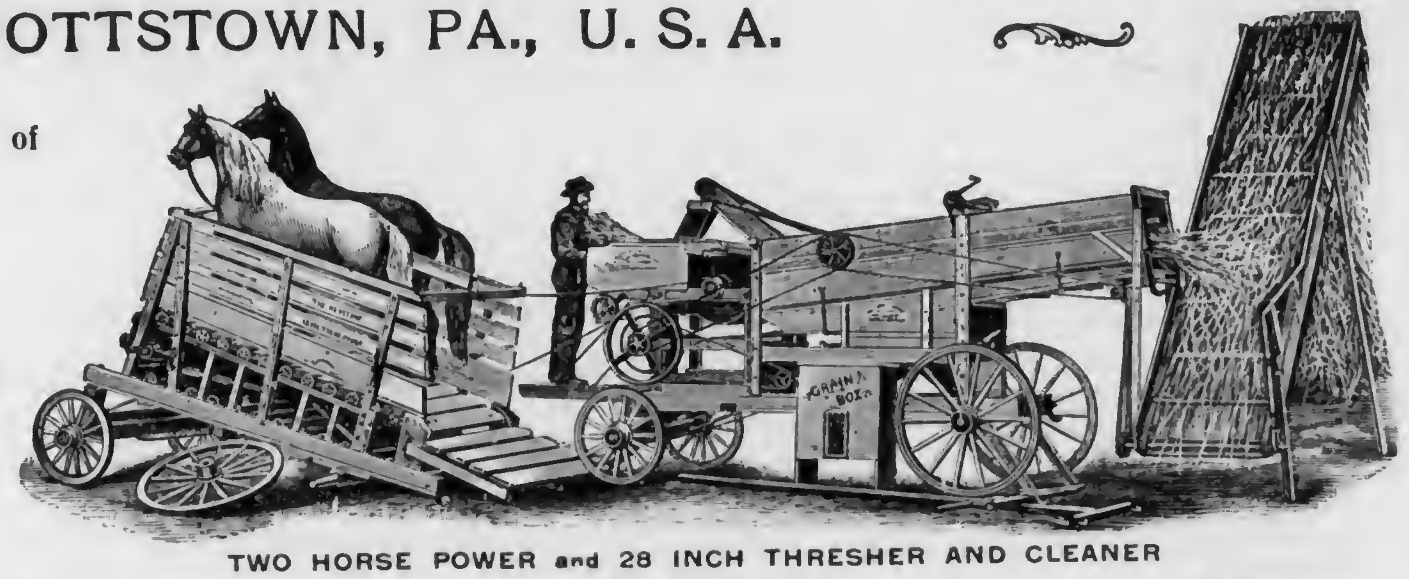
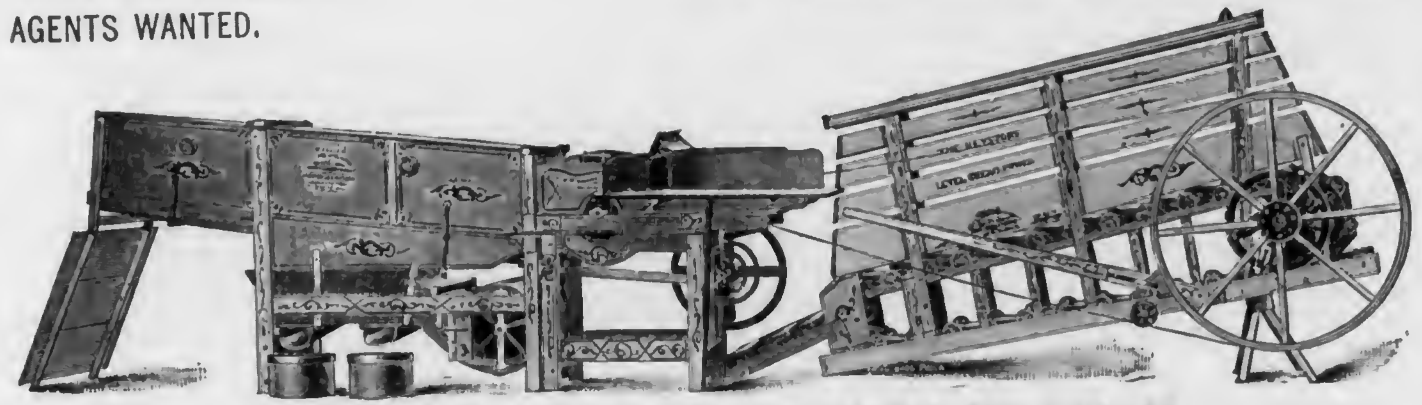
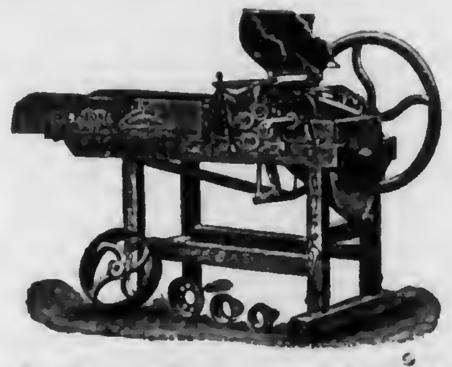


TWO HORSE POWER and 28 INCH THRESHER AND CLEANER



ONE HORSE POWER and 20 INCH THRESHER AND CLEANER



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The Keystone Weeder and Shallow Cultivator!!

A Great Labor Saver for the Cultivation of Sugar Beets, Trucking, etc.

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Narrowed to 30 Inches.

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Yours truly,
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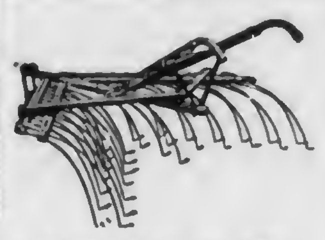
Write to us or to any of our agencies for Booklet containing more than one hundred testimonials from the best dealers. It will advise you of the numerous usages to which this great labor-saving tool is adapted.



Expanded to 7½ Feet.

AGENTS: F. C. Southwell & Co., London. James S. Duncan, Paris. G. Duchamp, Brussels. Thos. I. Hunter & Son, Maybold, Scotland.

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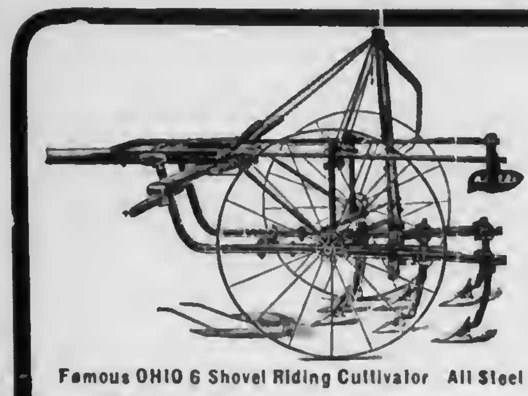

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This SEAL THAT FAMOUS are BEST and MEANS OHIO GOODS always SATISFY

They are the Greatest Sellers in all Countries because they are made to suit the users

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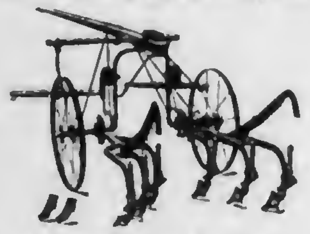
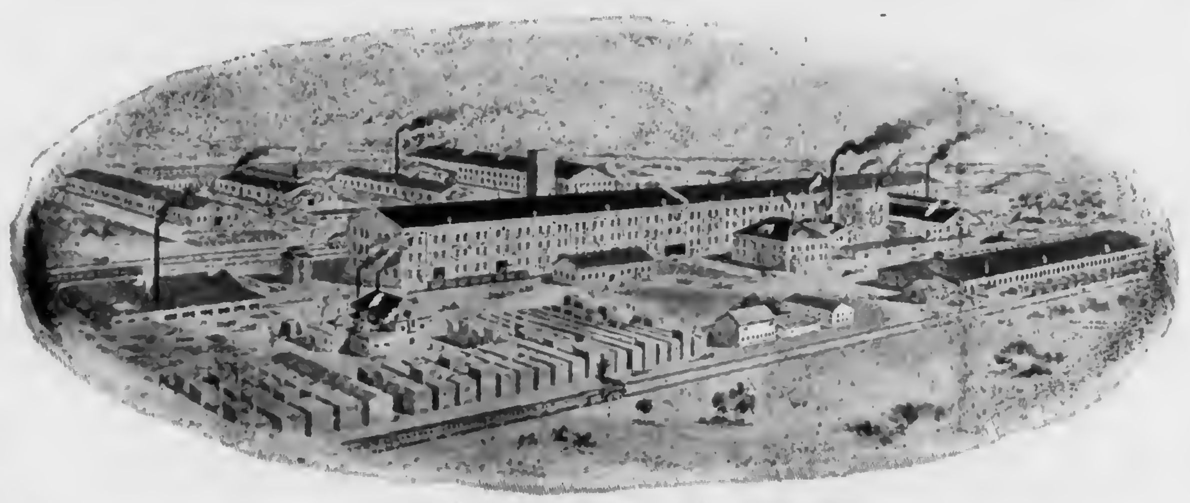
"Little Giant" 5 Tooth Cultivator, with Wheel Horse Hoes and Lever



6 Shovel Walking Cultivator With Spring Trip Shovels



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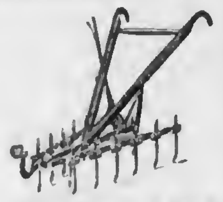
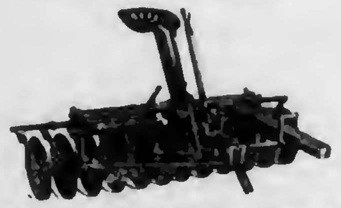


"Little Giant" 14 Tooth Harrow with Lever



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"Victor" Steel Beam Double Shovel Plow

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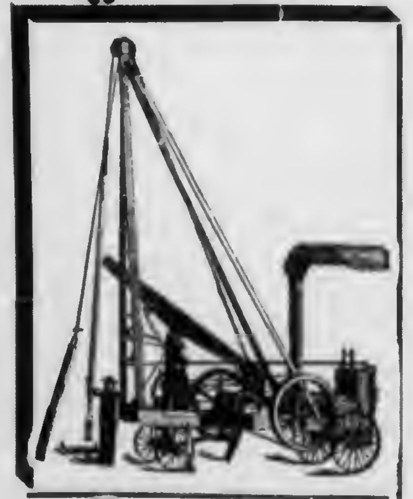
Which have in the past produced and are now producing more and better Salt than any other single section of country, either at home or abroad, were discovered by drilling prospect holes with the famous



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The "**Stars**" are especially well adapted to this use, and are more largely used for prospecting for minerals, oil, gas, sulphur and nitrate salts, or for general drilling, than drills of any other make. They are now in use in every State and Territory in the United States, Mexico, Canada, and in practically every foreign country, from the oil fields of the Caspian to the parched sheep pastures of Australia. For drilling wells for water supply for any purpose they are positively unsurpassed. Drill any depth, from 250 to 2,500 feet. Easy to handle and use, being simple in construction. They are strong and durable and highly efficient. Material and workmanship the very best afforded by ample means and abundant experience. **We manufacture also full line of drilling and fishing tools.**

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Is the best to buy and sell, because

IT IS THE STRONGEST BUILT,
IT IS THE MOST DURABLE,
IT IS PERFECTLY GOVERNED,
IT IS PERFECTLY REGULATING,
GRAPHITE BEARINGS NEED NO OIL,
IT HAS STOOD THE TEST,
IT SATISFIES ALL.

A record of ten years has demonstrated the above points to our complete satisfaction. Let us send you cuts and printed matter, showing fully the construction of the mill and its merits. Ten years' service has corrected all faults and perfected it as no other mill on the market has been. We make all sizes, from 6-foot to 18 foot Mills, both for pumping water and running machinery.

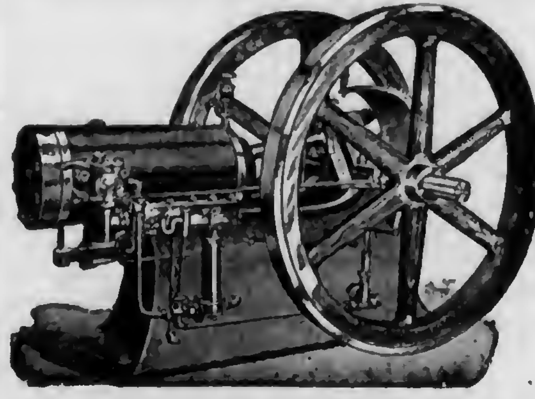
We also make all sizes of Steel Towers for Mills, Tanks, Bells, etc.

We are also large manufacturers of Tanks, both Steel and Wood, and can give you any size or shape. Our line of Grinders, Shellers and Feed Cutters is large and complete; also Pump Goods, Horse Powers, etc.

GASOLINE ENGINES

Its another of our products, and we are making a good one. We furnish them for pumping water, running machinery of all kinds on the farm, running printing presses, well machines; in fact, for any use where, a good, reliable, cheap power is required. It takes the medal wherever exhibited.

Never an exception to this



Guaranteed

to have all the power we claim for it.

Challenge Wind Mill and Feed Mill Co., BATAVIA, ILL., U. S. A.

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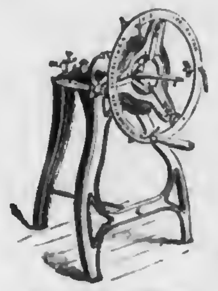
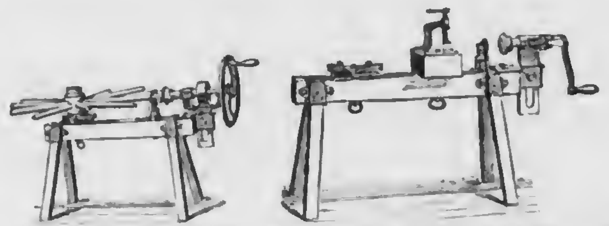


Silver's New Taper Hub Boring Machine. Hand power.

Silver's Hub Boxing Machine for light or heavy work.



Dole & Deming's Spoke Tenon Machines, hand or power. These machines cut tenons 7-16 to 2 inches diameter and up to 6 inches long.

Silver's No. 1½ Drill, single geared, hand feed.

Silver's No. 1 Hand Drill. Two speeds. Self feed.

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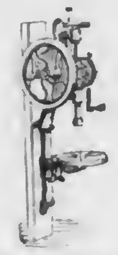
No. 12 Advance Drill. Three sizes. Light power or hand. Self feed.



No. 12 Advance Hand Drill. Three sizes. Two speeds. Self feed.

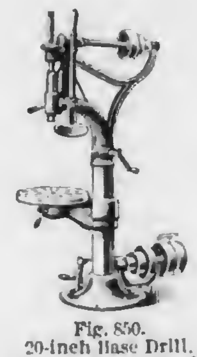


Fig. 850.
20-inch Base Drill.
Lever or screw feed.
Round or square base.

Catalogues
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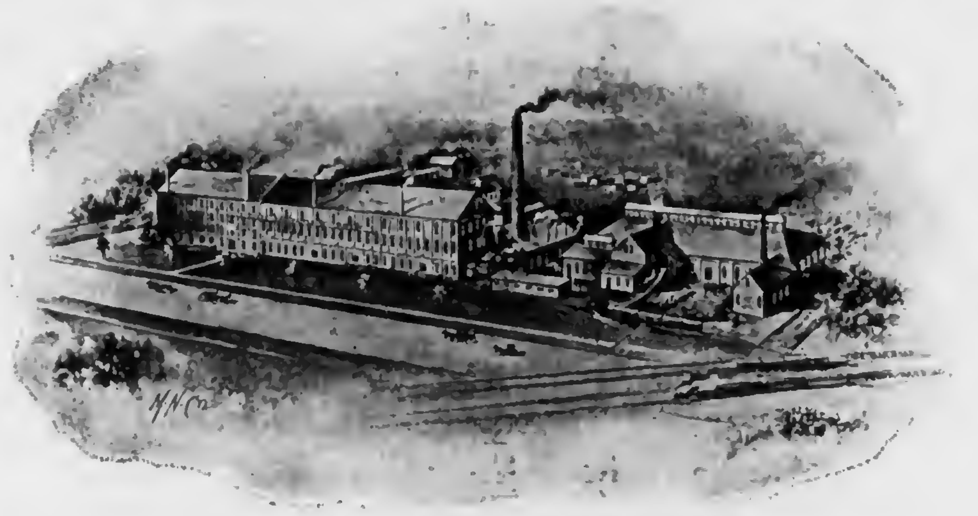
and
Spanish.



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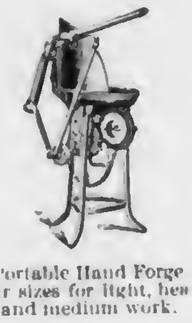

Portable Hand Forge
Four sizes for light, heavy and medium work.

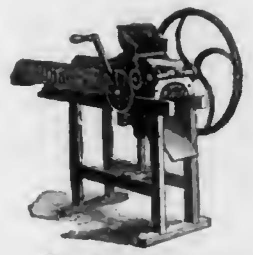

Fig. 779.
Nos. 8½ and 10½, "Ohio" Hand Feed Cutter.

THE SILVER MANUFACTURING CO., Salem, Ohio, U.S.A.

New York address: 56 and 58 Pine St. Cable address: "Silver," Salem. Codes: A B C. 4TH LIEBERS W.U., AND MANUFACTURERS

Manufacturers of

"OHIO" Feed and Ensilage Cutters, every size from the smallest hand to the largest power machines; Drilling Machines, hand and light power; Portable Forges; Carriage Makers' Tools; Butchers' Tools, etc.

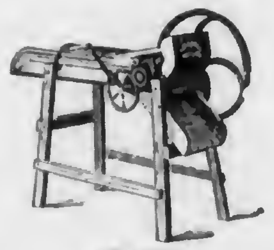

Fig. 783.
No. 11¼, "Pony" Hand Feed Cutter.

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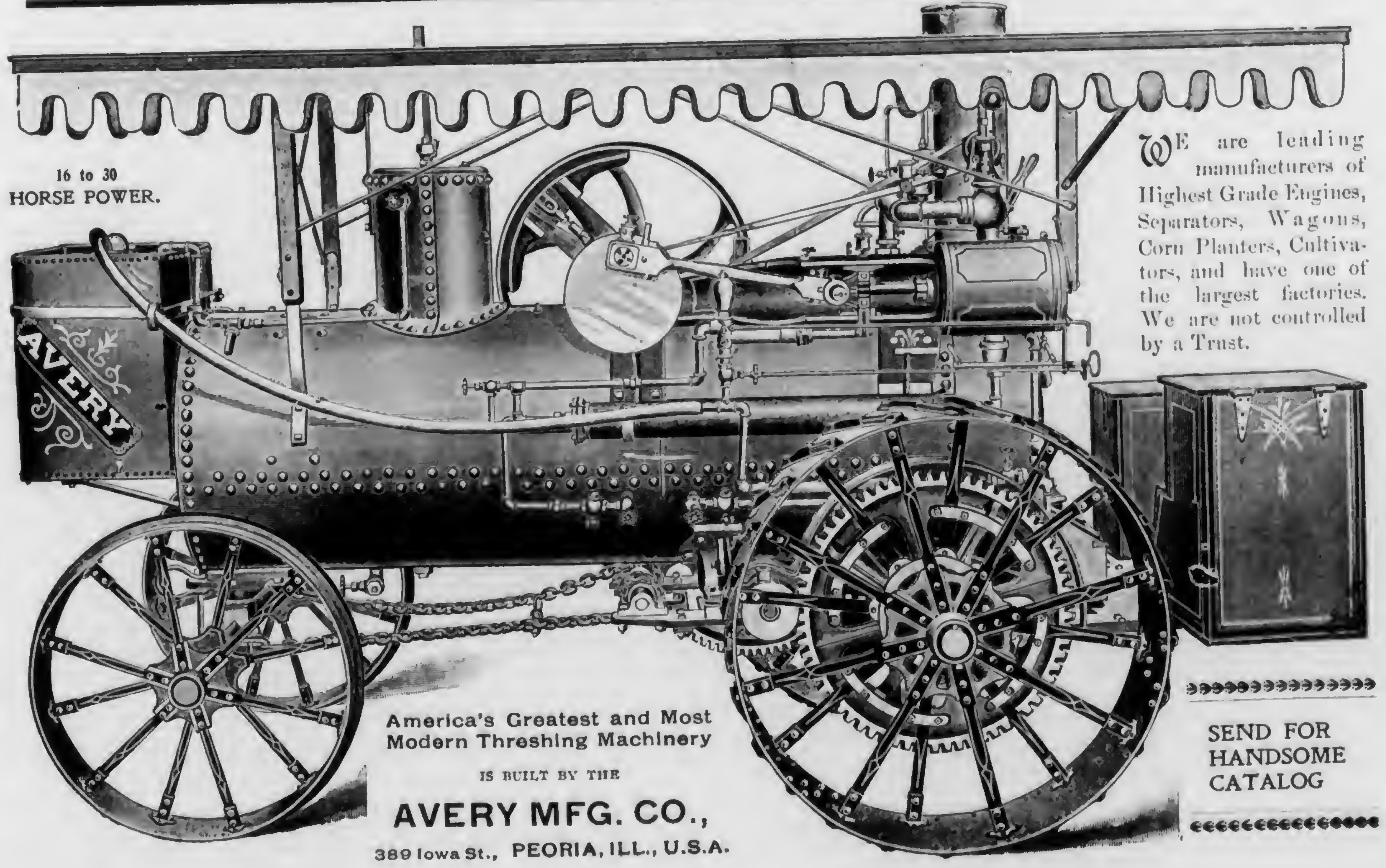
16 to 30
HORSE POWER.



WE are leading manufacturers of Highest Grade Engines, Separators, Wagons, Corn Planters, Cultivators, and have one of the largest factories. We are not controlled by a Trust.

America's Greatest and Most Modern Threshing Machinery

IS BUILT BY THE

AVERY MFG. CO.,

389 Iowa St., PEORIA, ILL., U.S.A.

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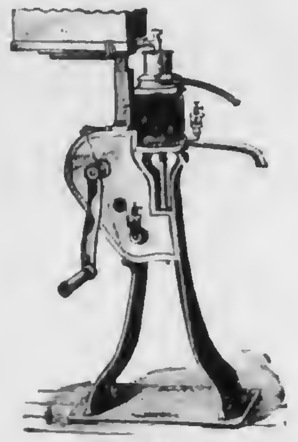
THE IMPROVED UNITED STATES CREAM SEPARATOR



CREAM SEPARATOR

Is the only make having practically three separators in one, and to which is due its remarkably clean skimming.

The U. S. separates the cream from the milk the Easiest, the Quickest, and the Most Thoroughly of any Separator made, and on account of its simplicity and greater strength, is the easiest to care for and the most durable.

For these and other reasons the U. S. is the most profitable Separator to buy. In a cold climate it will save enough cream that would otherwise go into the skim-milk to pay for itself in a year, and in a warm climate in a much shorter time.

We also manufacture Fruit Driers, Churns, Butter Workers, Animal Powers, etc.

Write for special illustrated catalogues giving full particulars, FREE.

VERMONT FARM MACHINE COMPANY

Cable address, "Vermonfarm," Bellows Falls, Lieber's Code, and W. U. Int.

BELLOWS FALLS, VERMONT, U. S. A.

Ist der einzige Apparat dieser Art, so zu sagen, mit drei Entrahmern in einem Behälter, durch den eine so ausserordentlich vollständige Entrahmung erzielt wird.

Der "U. S." Entrahmer trennt den Rahm von der Milch in einer einfacheren, schnelleren und vollkommeneren Weise, wie irgend eine andere Vorrichtung, und wegen seiner einfachen Konstruktion und soliden Ausführung ist er am leichtesten zu handhaben und hält am längsten vor.

MILCH ENTRAHMER

Aus den obengenannten, und auch aus anderen Gründen, bietet der "U. S." Milch Entrahmer dem Käufer die meisten Vorteile. Durch die Ersparnisse an Rahm, der sonst in der abgerahmten Milch bleiben würde, macht sich derselbe in kalten Gegenden schon in einem Jahre und in warmem Klima in noch viel kürzerer Zeit bezahlt.

OBST-DÖRRÖFEN

Wir verfertigen auch Obst-Dörröfen, Butterfässer, Apparate zur Butterbereitung, die mit animalischer Kraft betrieben werden, etc.

Auf Wunsch versenden wir unseren besonderen, illustrirten Katalog mit Angabe allen Details kostenfrei.

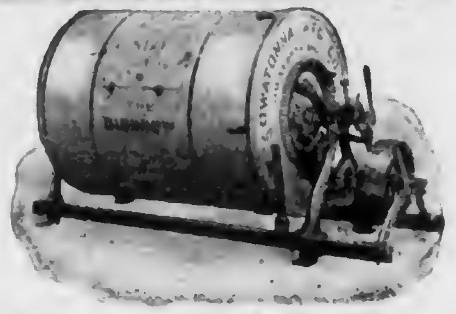
VERMONT FARM MACHINE COMPANY,

Bellows Falls, Vermont, U. S. A.

Teleg. Adr. "VERMONFARM," Bellows Falls, Lieber's Codex, W. U.

FRUIT DRIER

Creamery, Dairy and Milk Dealers' Apparatus and Supplies



Disbrow Combined Churn and Butter Worker.

We are the largest manufacturers and dealers in this line of goods in the world.
We are prepared to quote on our special machinery, or on complete outfits.
We make prices F. O. B. New York City.
Our 160-page Export Catalogue mailed anywhere, on application.

We Call Your Special Attention to Our

COMBINED CHURNS AND BUTTER WORKERS, IDEAL SKIM-MILK WEIGHERS, REFRIGERATING APPARATUS, GANG BUTTER PRINTERS, PARCHMENT PAPERS, BABCOCK TESTERS, PASTEURIZERS, ETC., ETC.

Ideal Skim-milk Weigher.

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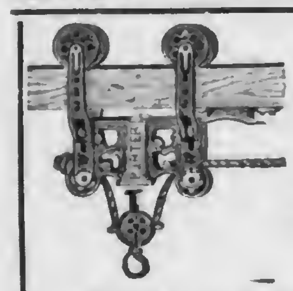

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The "PIONEER" Manufacturer of

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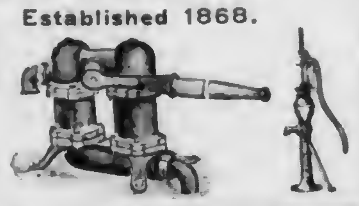

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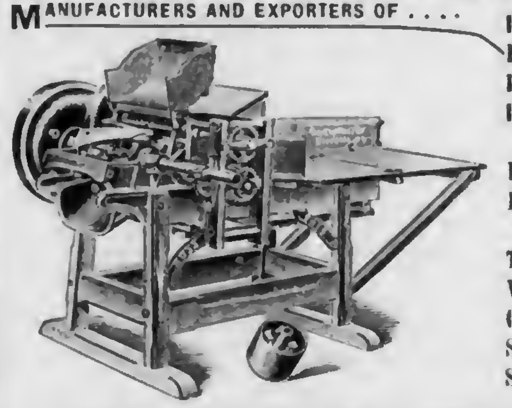

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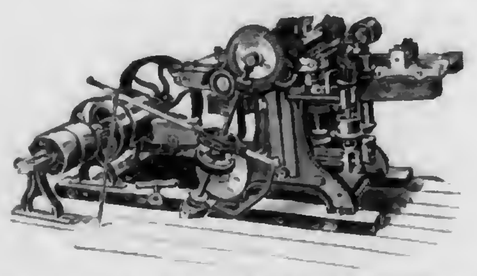

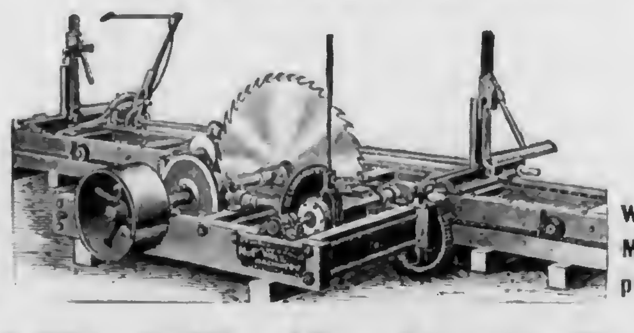

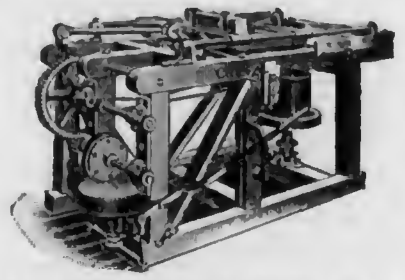

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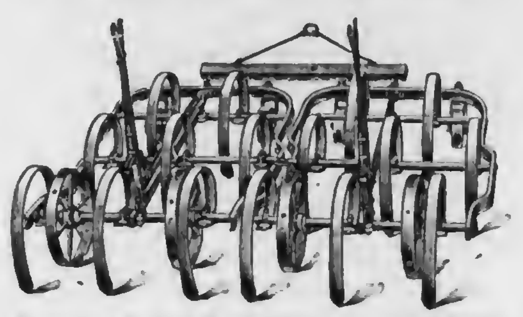
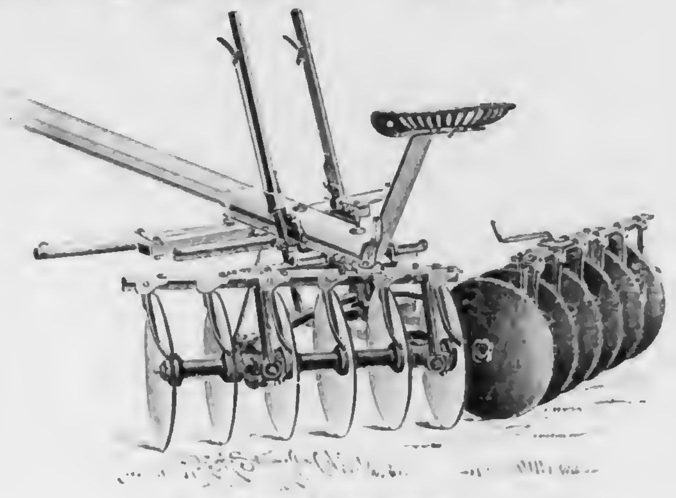
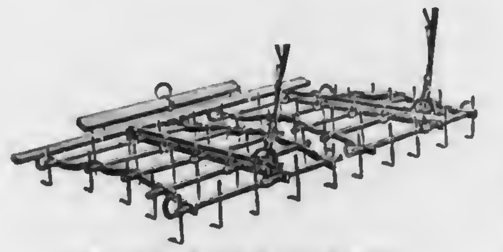


Standard Spring Tooth Harrow, with Wheels.

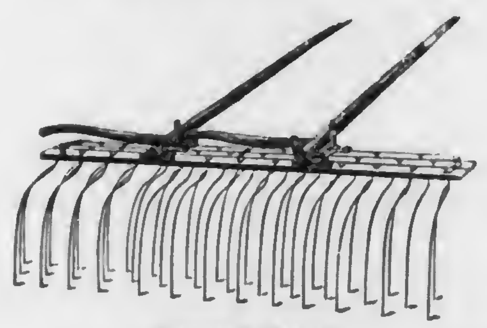


Standard Model B Disc Harrow.

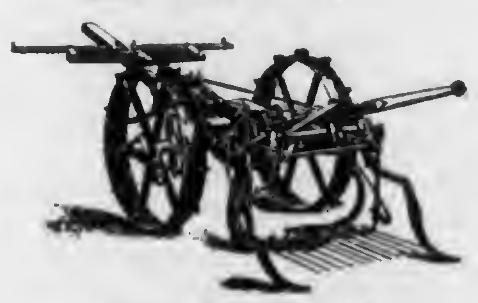
Standard One-Horse Harrow.



Standard Spike Tooth Harrow.



Standard Weeder.



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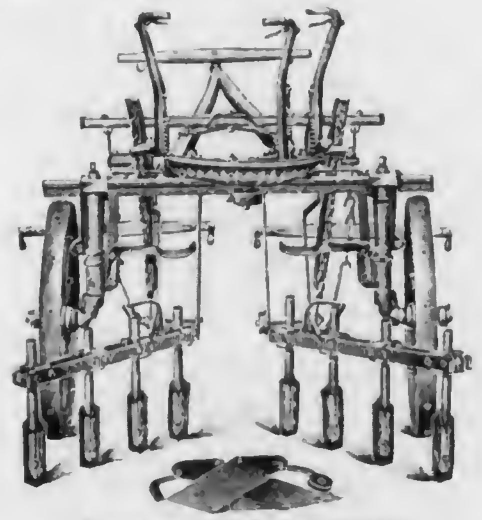

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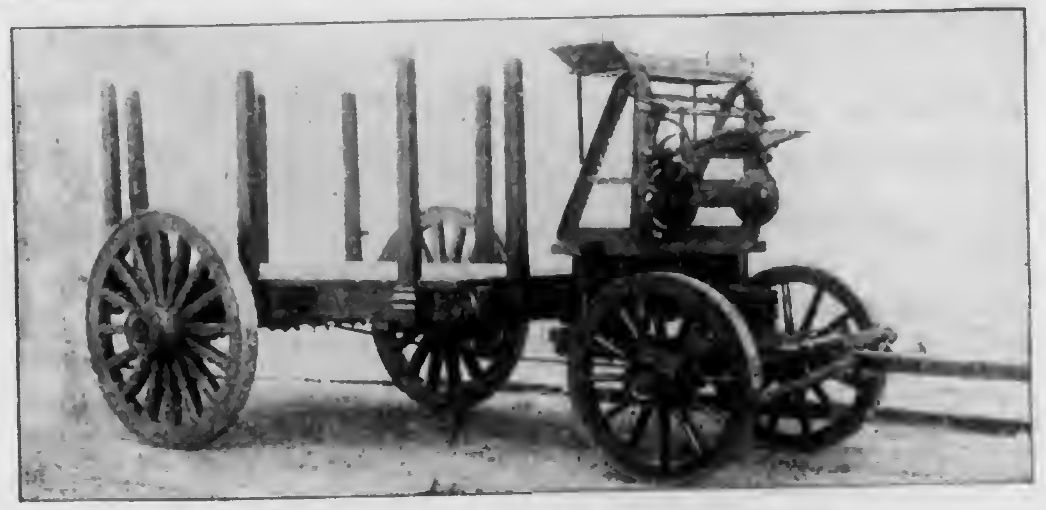

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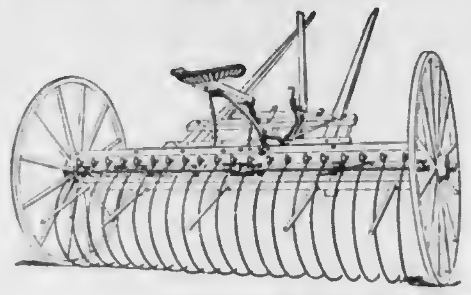

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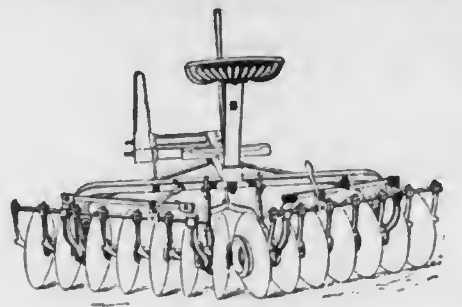
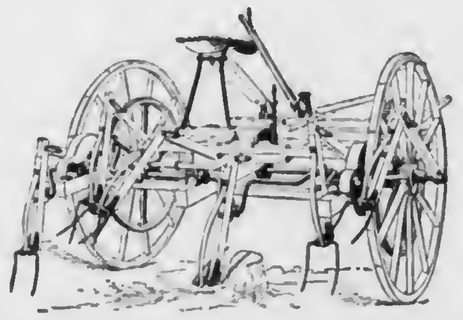


Grain-Seeder Attachment for Harrows



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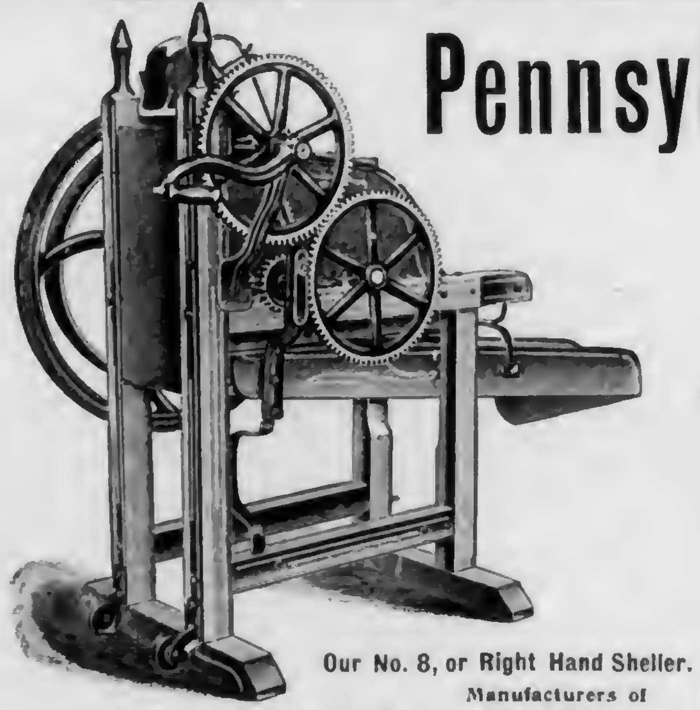

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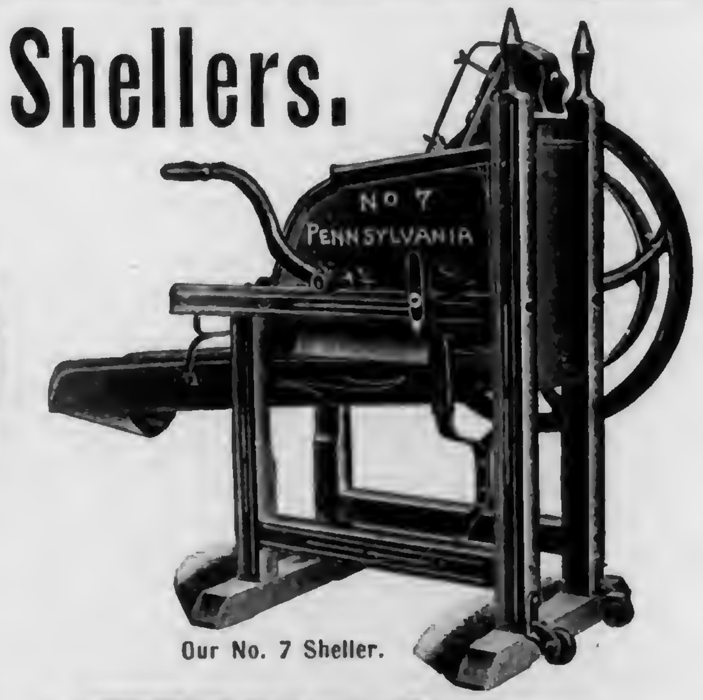

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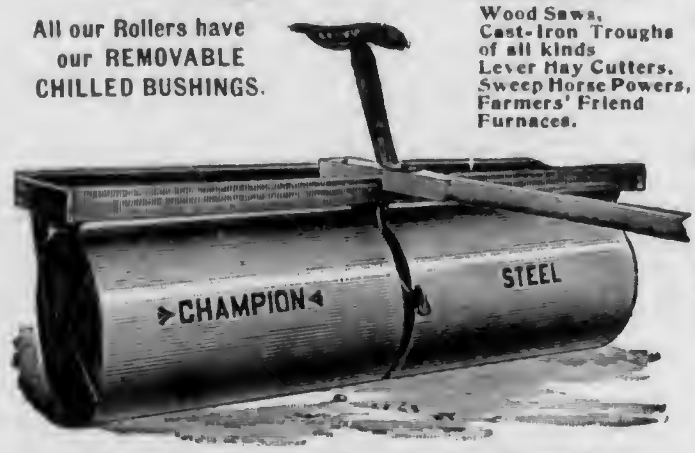

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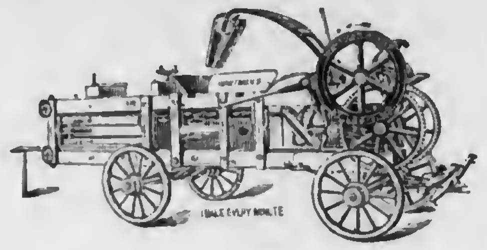

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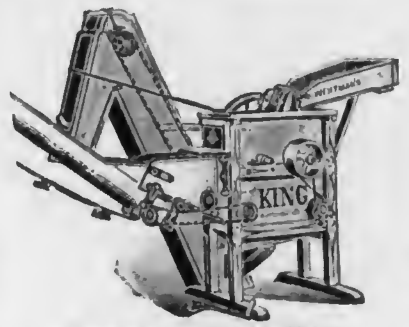
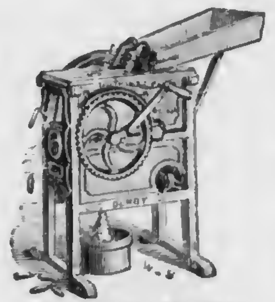


Two-hole Corn Sheller.



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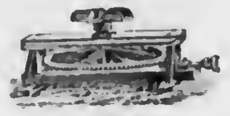

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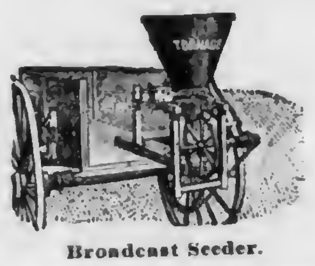

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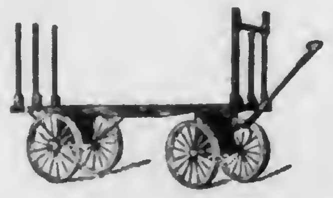

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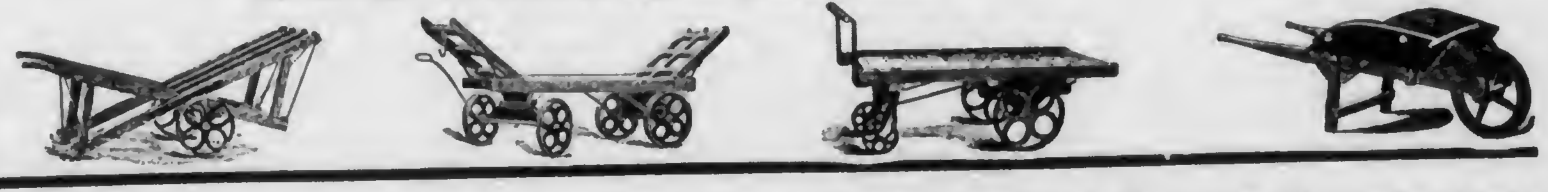

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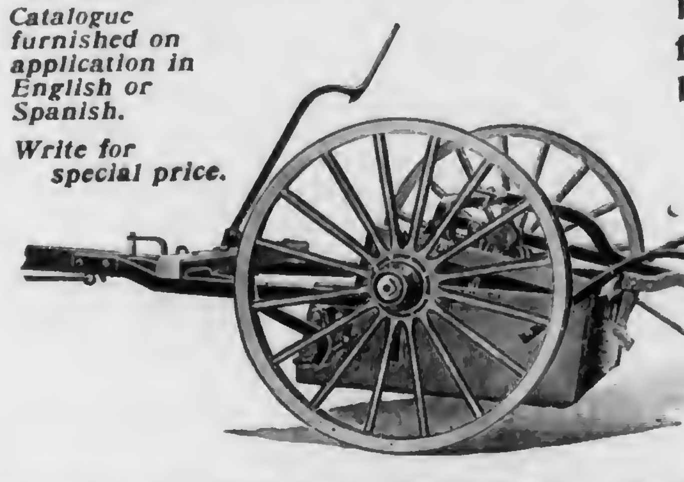

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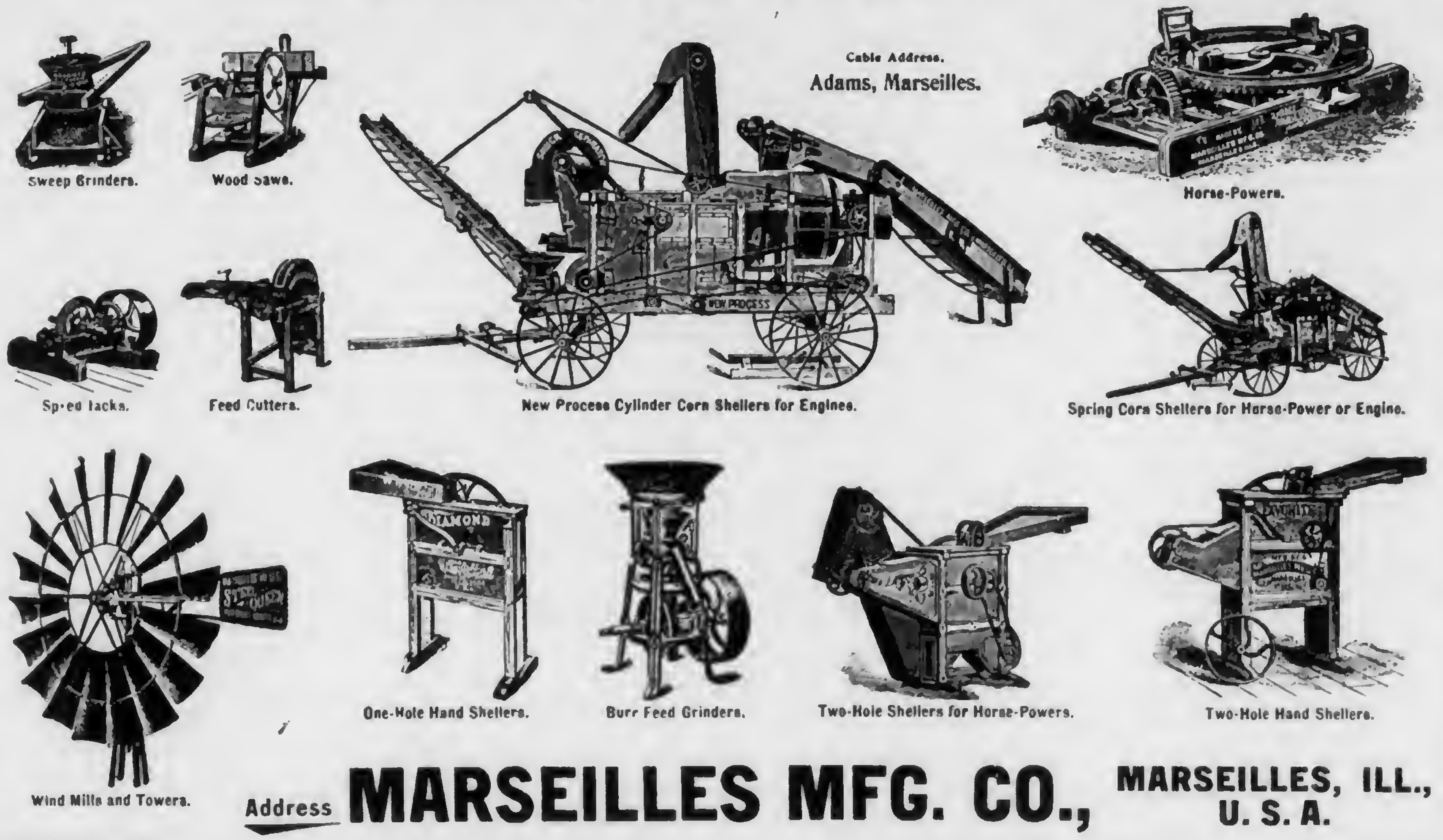
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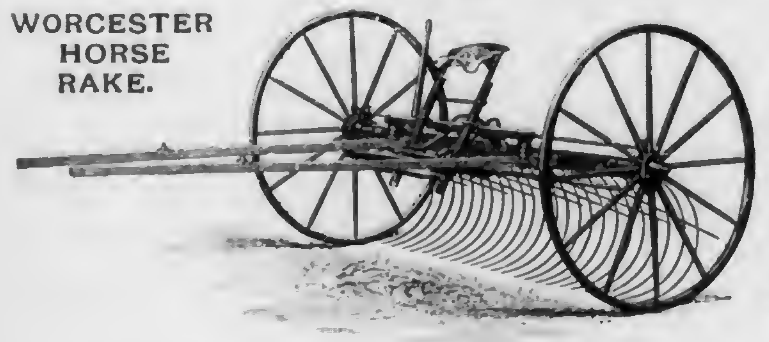

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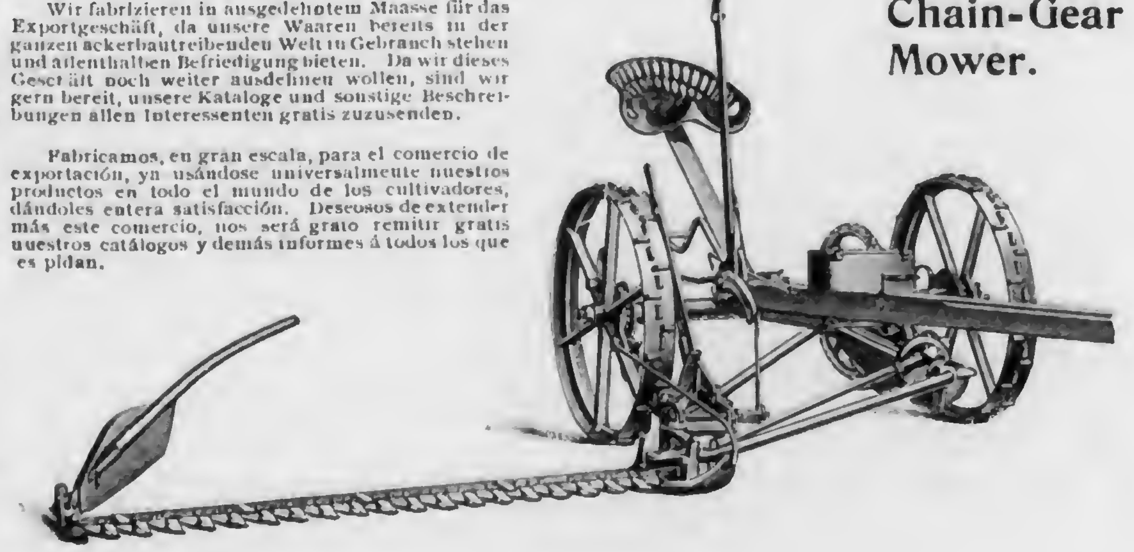

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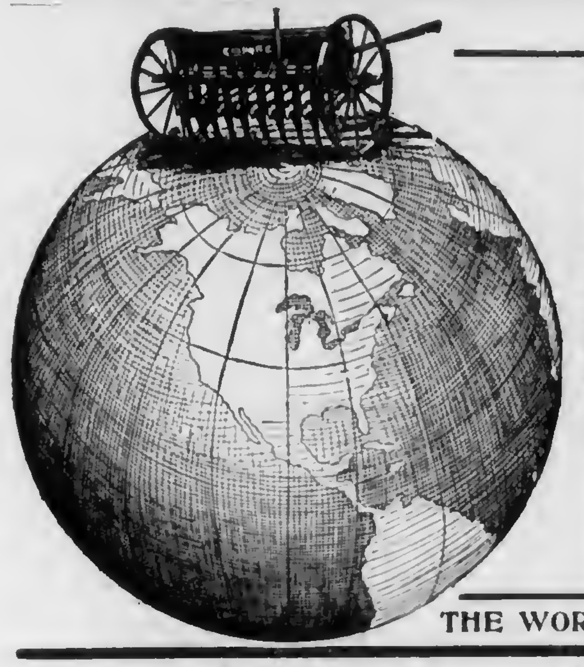

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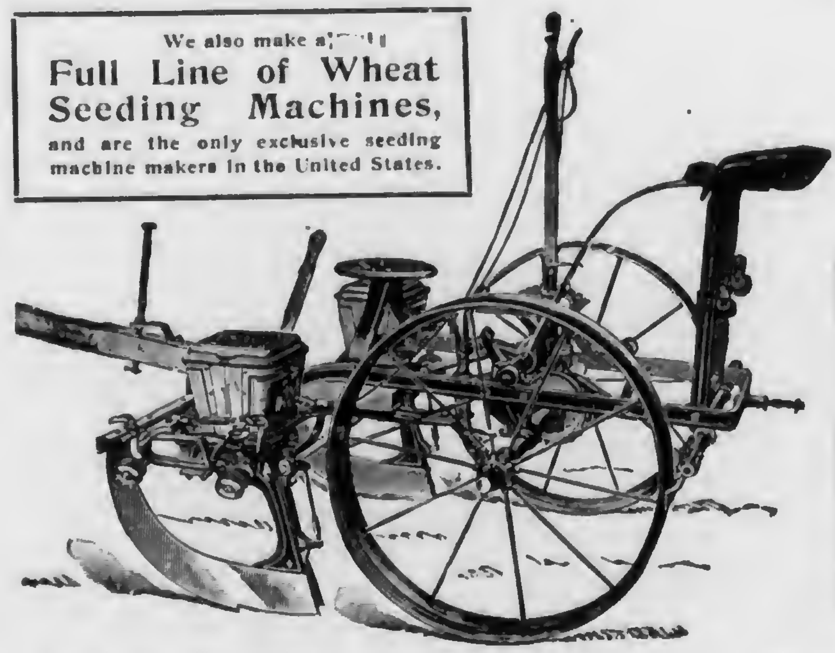

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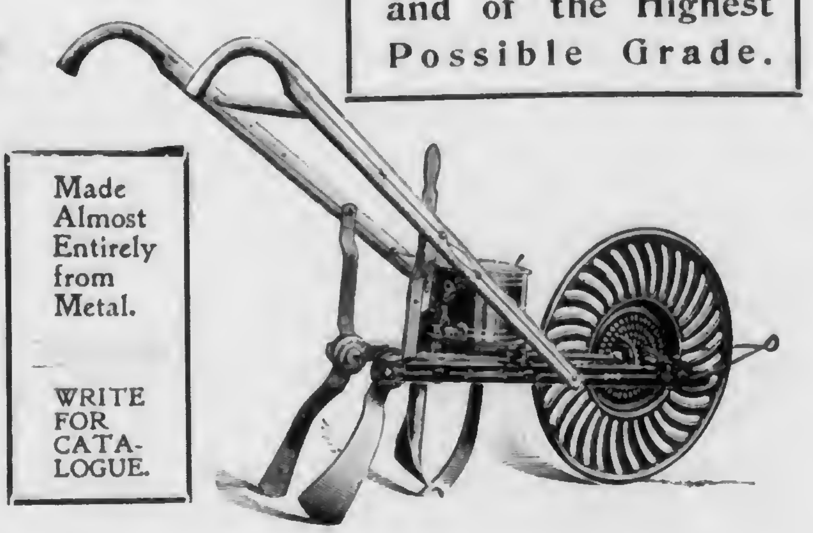

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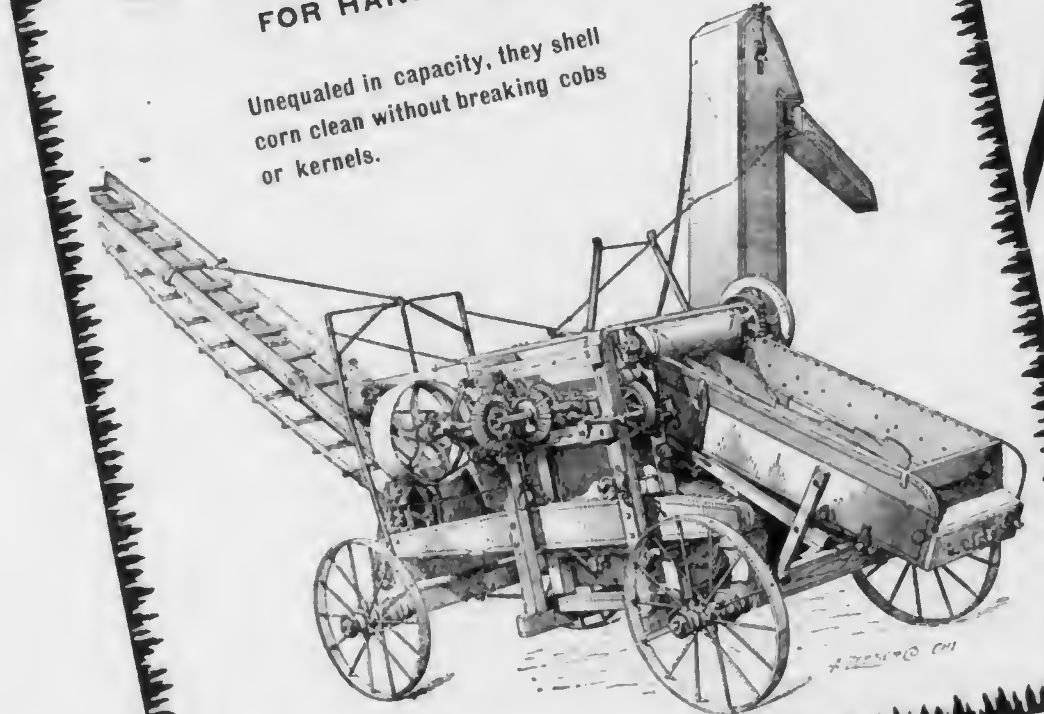

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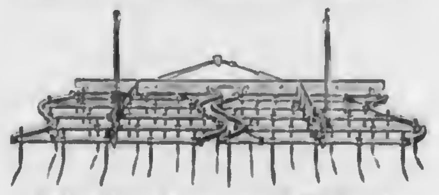
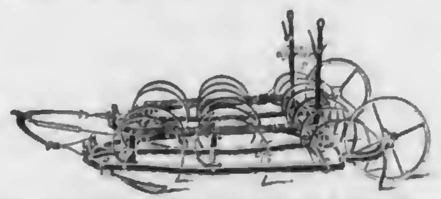
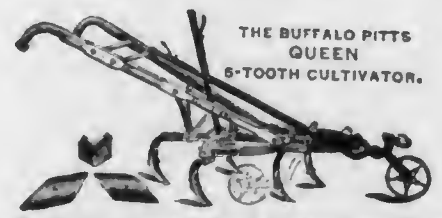


Buffalo Pitts Spring-Lever Spike Harrow.



Buffalo Pitts Combination Wheel and Runner Spring-Tooth Harrow.



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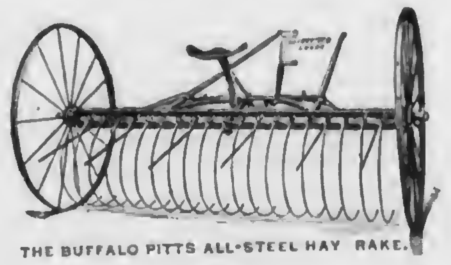

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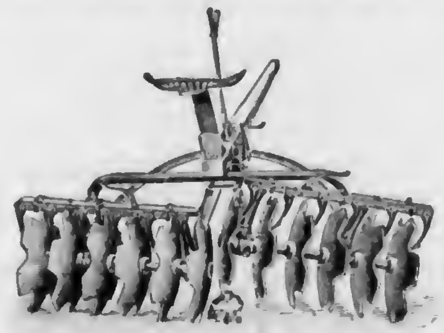
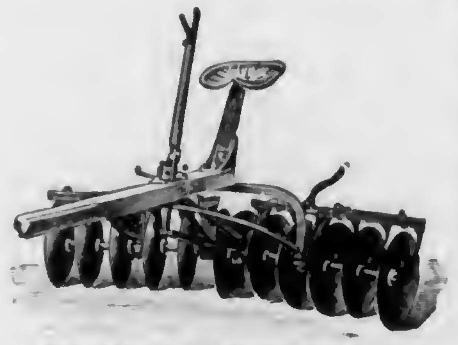


Buffalo Pitts Spring Flexible Spade-Cut Disc Harrow.



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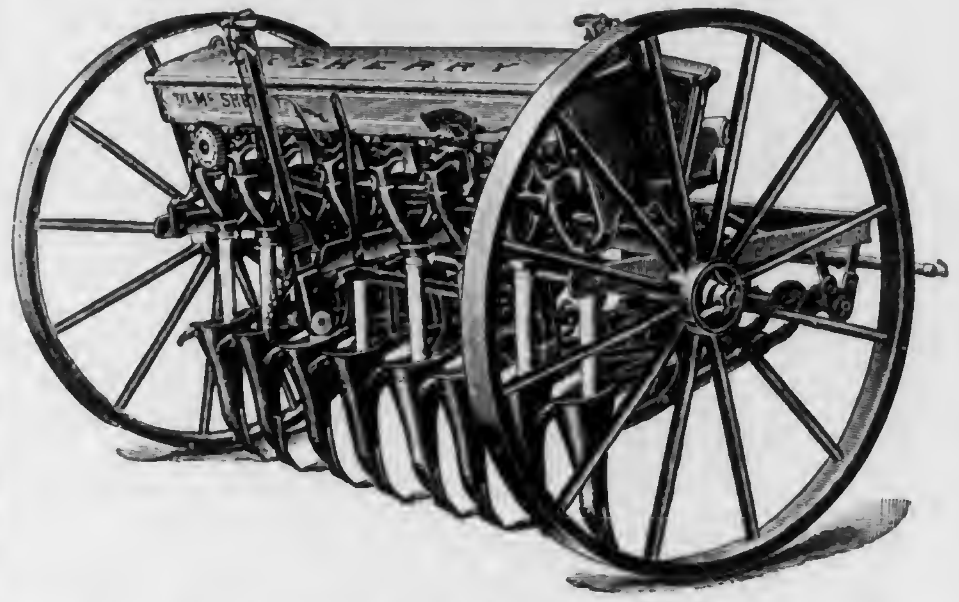

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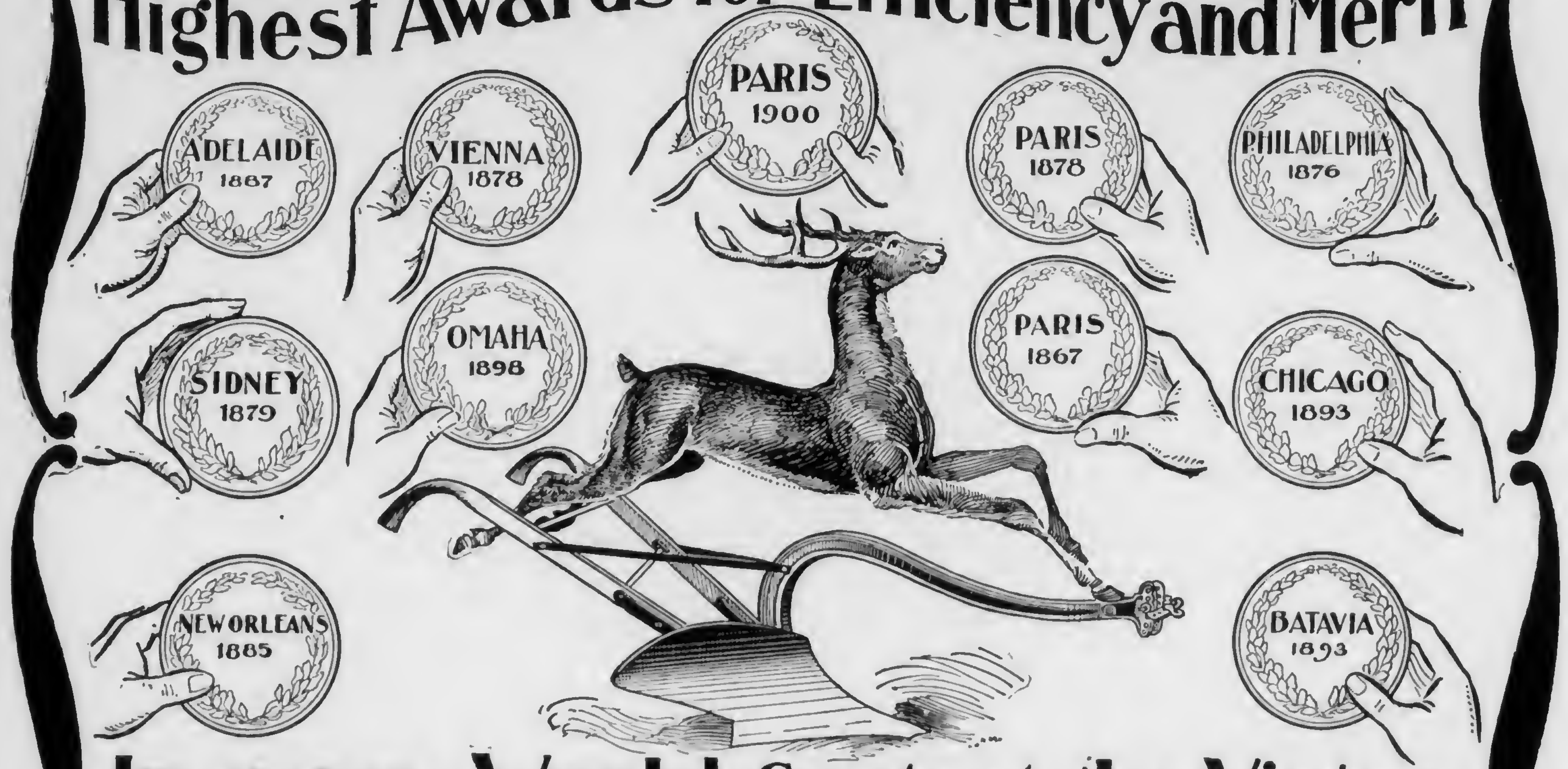

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DEERE & MANSUR COMPANY,

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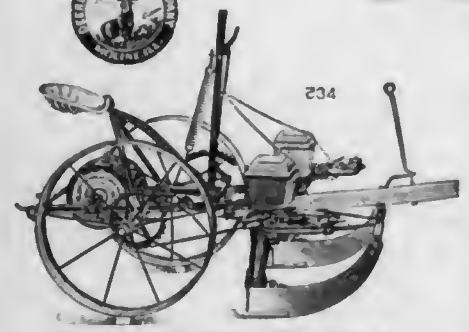

Deere Corn Planter.

Force Drop—Spring Lift—Check Rower, Drill and Foot Drop—Automatic Reel—Adjustable Seat, etc.

Corn Planters,
Disc Harrows,
Corn Shellers,
Corn Huskers and Shredders,
Seeders,
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Beet Tools,
Garden Tools,
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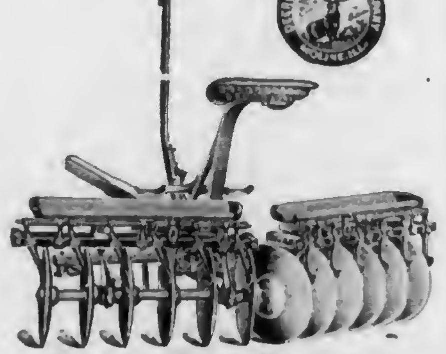
Etc. CIRCULARS FREE.



Deere Disc Harrow.

Cross Bar of Steel Tubing—Steel Shanks Wood Bearings, with Oil Tubes—Steel Scrapers—Long Lever—Steel Weight Boxes.

DEERE SHELLERS

Will shell more corn with less power than any machine on the market. The corn is perfectly cleaned, and the cobs are left in good shape for fuel. No sieve to clog in damp corn.

Circular free.

Folding Cob Stacker.
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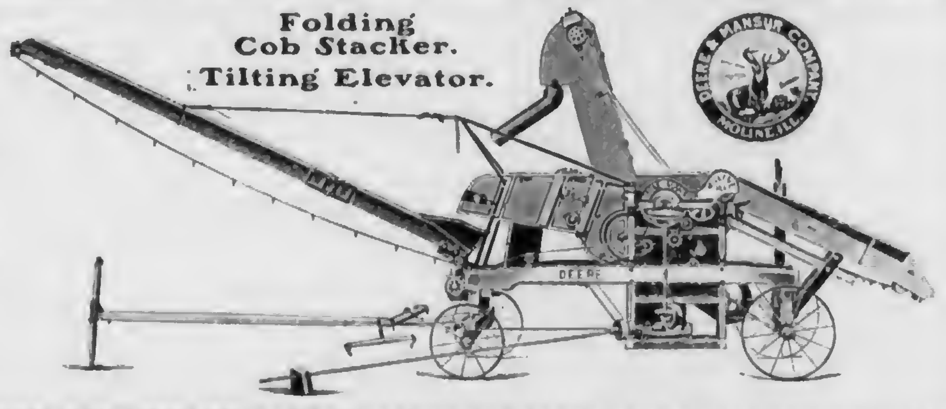


DAVID BRADLEY MFG. CO.

BRADLEY, ILL.

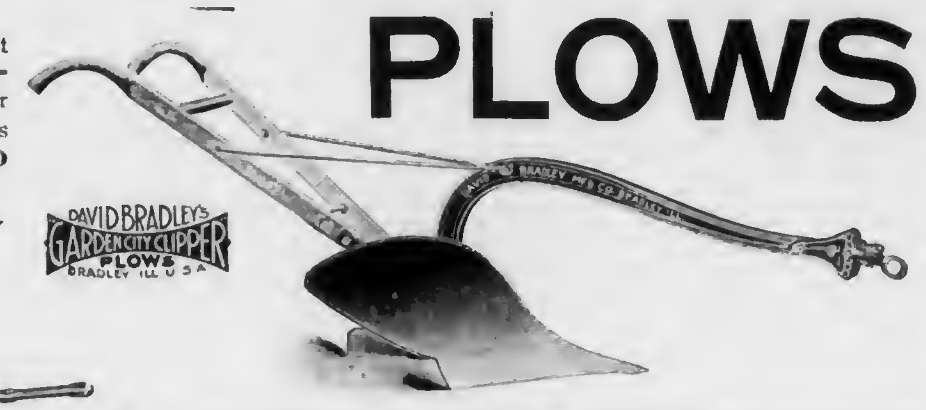
Makers of Over 200 Sizes and Styles

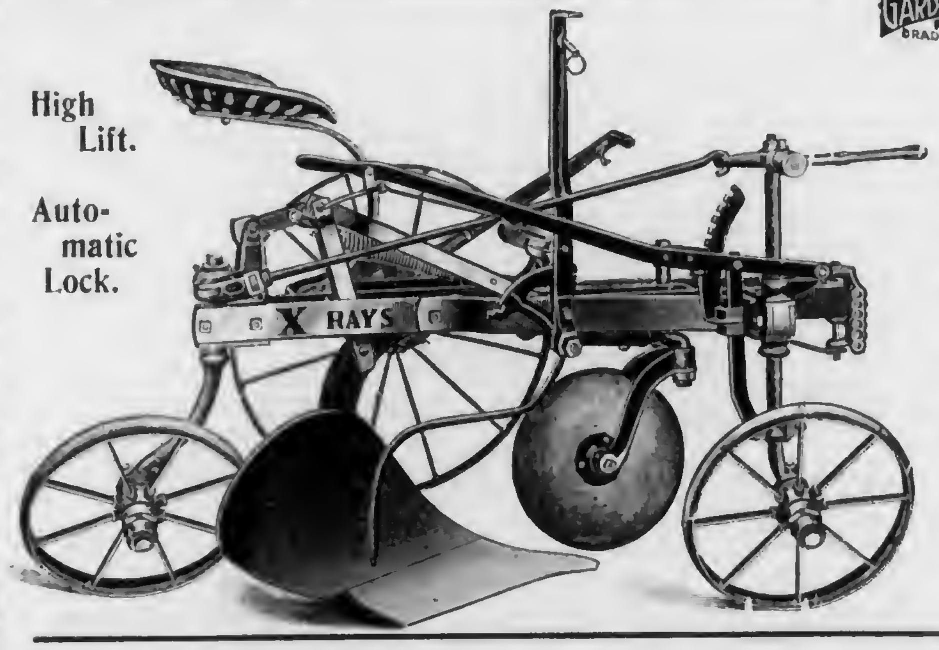
OF THE CELEBRATED

"Garden City Clipper"

PLOWS

NO OTHER make has ever approached them in the two great **ESSENTIALS** for a perfect Plow, viz.: **CORRECT SHAPE** and **UNIFORMLY HARD TEMPER.** Our Catalogue No. 9 (page 3) explains just why this Plow has attained its great popularity. Please send for it. We make both **WOOD AND STEEL BEAM.**




High Lift.
Automatic Lock.
X RAYS

X-Rays Sulky and Gang Plows

Have a powerful **LIFTING SPRING.** A boy can handle them easily.

A PATENTED STOP carries the Plow on the frame and lightens draft.

A SPRING CLEVIS eases draft and saves breakage.

"GARDEN CITY CLIPPER" bottoms are put on these Plows.

BEST WORK with **LIGHTEST DRAFT.**

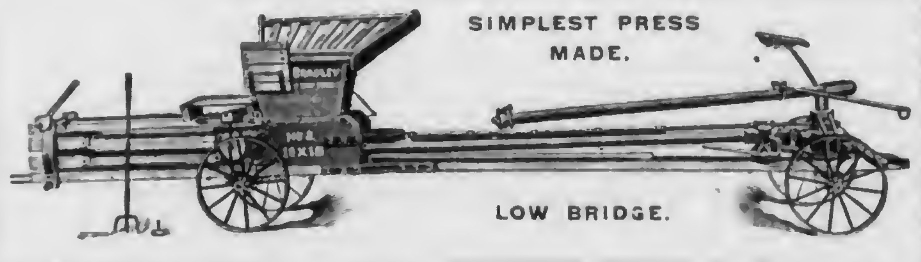
See December issue of this paper for more detailed description.

BRADLEY DOUBLE-CAM ALL STEEL HAY PRESS

VERY FEW WORKING PARTS.
NOT A COG NOR CHAIN ABOUT IT.
NOTHING TO GET OUT OF ORDER.

3 sizes bale chamber: 14 x 18, 16 x 18 and 17 x 22.

CAN BE OPERATED BY ONE HORSE;
EASY WORK FOR TWO.
FULL CIRCLE, CONTINUOUS BALER.
LARGE CAPACITY. VERY POWERFUL.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LOW BRIDGE.

PLEASE SEND
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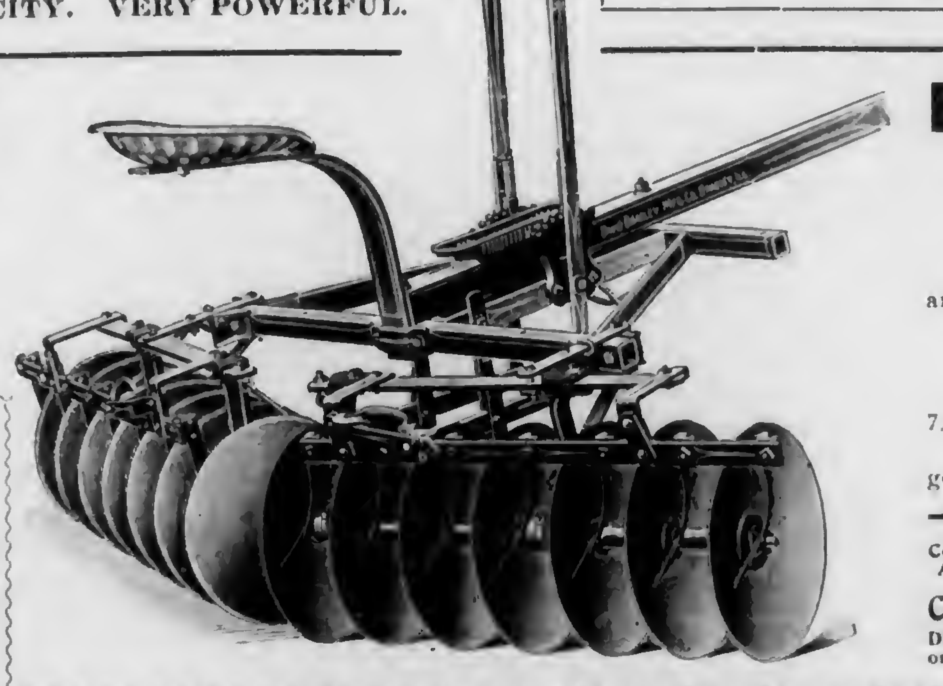
PRICES.



BRADLEY JR. DISK HARROW

TWO LEVERS, one for each gang.

BOXES are separate, and can be quickly and cheaply renewed.

SCRAPERS have spring-steel shanks.

SIZES—16, 18 or 20 in. disks.

WIDTH CUT—6½, 7½ or 8½ feet.

Equalizer and neck-yoke go with each harrow.

Code Word Address: "Yeldarb."

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Collins Plow Co.

QUINCY, ILL., U. S. A.

Quincy Beauty Riding Plows.

For use with Horses or Cattle.

Medals and Diplomas World's Columbian Exposition, Chicago.

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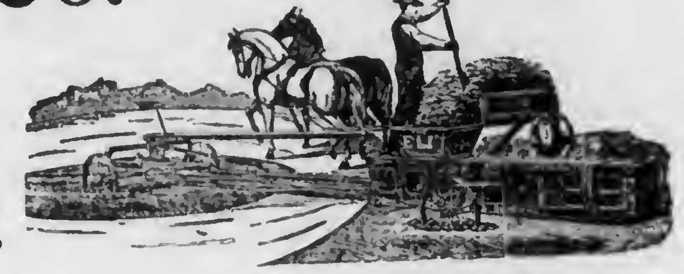
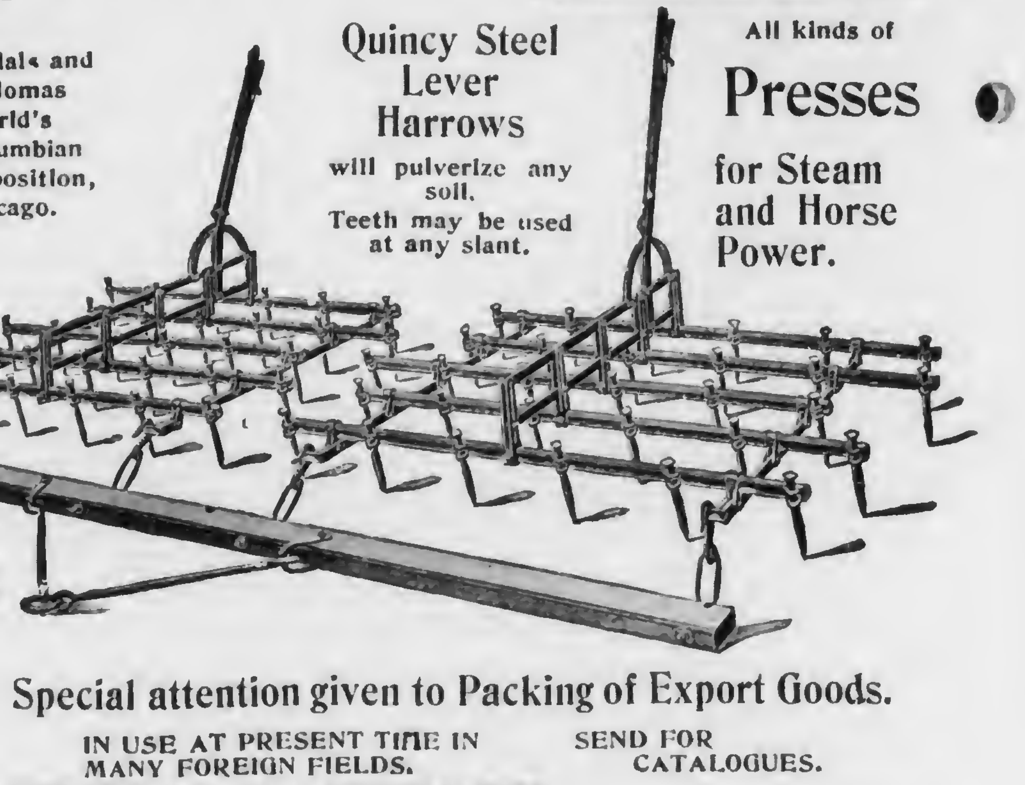


Quincy Steel Lever Harrows will pulverize any soil. Teeth may be used at any slant.

All kinds of **Presses** for Steam and Horse Power.



High-Grade Steel Plows.

Collins Plow Co.

Collins' Hardened Steel Plows are the BEST.

Special attention given to Packing of Export Goods.

IN USE AT PRESENT TIME IN MANY FOREIGN FIELDS.

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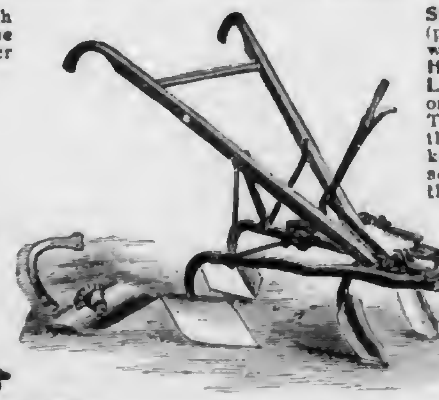
Hench & Dromgold Low Down Steel Frame Force Feed Grain and Fertilizer Drill, with Spring Pressure; 8 tube 8", 9 tube 7", 11 tube 7", 13 tube 7", 15 tube 7". Positively the neatest, strongest, and most simple grain and fertilizer drill on the market, either pin or spring break.

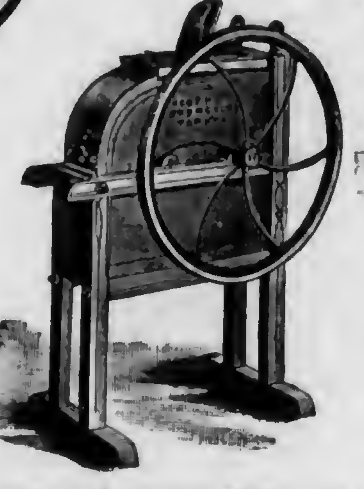


Steel Age (plain or with horse) **Hoe and Lever,** 5, 7, or 9 shovel. The best on the market. Are selling thousands.

Single Row Corn Planter with and without fertilizer, concave or double wheel. Guaranteed superior over all others.

Cast Iron Plows. Heavy Eagle Series. We illustrate the No. 75 plow, the best known of this series, and adapted specially for sod or stuble ground. The Nos. 25 and 55 are somewhat heavier.

Riding or Walking Spring Tooth Lever Harrows on Wheels, ratchet tooth adjustment, also lever adjustment; we manufacture them in the following sizes: 14, 15, 17, 19, 21, 25, 27, 29 and 31; also ratchet steel float harrows; we are the leading and largest manufacturers of spring tooth harrows in the U. S. A.



Continental Double Hole Sheller, with shaker, belt and fly wheel; also a variety of single hole shellers

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Cable Address, "ADVERBIAL"

We manufacture a full line of Cast Iron and Steel Plows, and Agricultural Implements and Machinery, for Cuba, South America, Africa, Australia, and other foreign countries. Nothing but the best grade of steel and seasoned lumber used in their construction. Write for prices and terms.

EXPORT AGENTS FOR THE JOHNSTON HARVESTER CO. AND PARLIN & ORENDORFF CO.

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Manufacture the Largest and Most Complete Line of Agricultural Implements in the World.

PLOWS OF EVERY VARIETY AND KIND.

Fifty different styles.

SIZES—
7-inch,
8-inch,
9-inch,
10-inch,
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12-inch,
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Plows adapted to every condition of soil and climate. Will make others to suit requirements of Foreign trade if necessary. In finish and style, in good workmanship and quality of material used, there is none equal to the "Rock Island."

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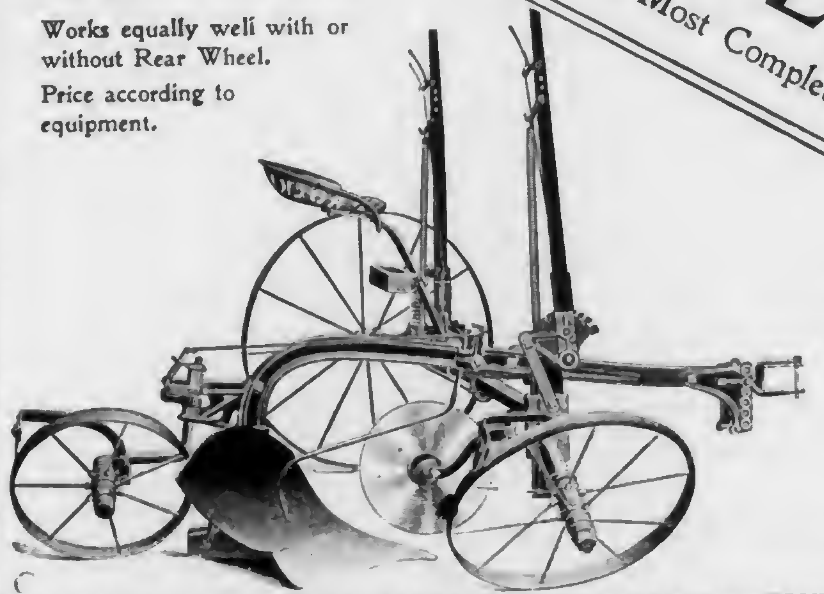
Works equally well with or without Rear Wheel.

Price according to equipment.



Ox Chains furnished instead of Triple Trees when so ordered.

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Well Sown—Rich Harvest.

Be Careful of the First and the Second is assured.

The **Cahoon** SEED SOWER

Not only sows all kinds of Grain and Cleaned Grass Seed perfectly, but does it five times faster, with one-third less seed, than is possible by hand.
Produces vigorous, plentiful harvest.
One day's use will more than pay for itself.
Sold by all first-class dealers throughout the world.

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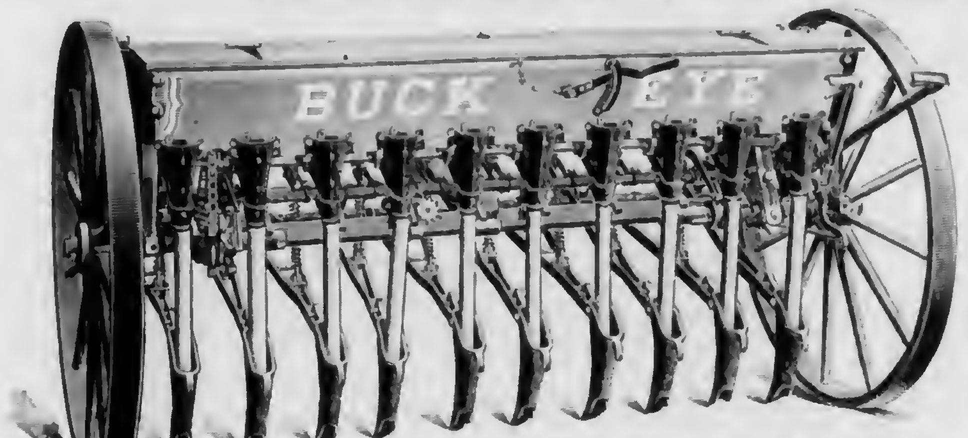
BUCKEYE GRAIN DRILLS



BUCKEYE COMBINED GRAIN AND FERTILIZER DRILL.

The Buckeye line of **Plain and Fertilizer Grain Drills** are specially adapted to the requirements of the foreign trade. Made either in Hoe, Shoe or Disc Drills, in suitable widths, to suit the different requirements.

Also a full line of **Broadcast Seeders and Sowers.**

Sold by prominent Implement Houses in nearly all parts of the grain-growing sections of the world, and we are equipped for executing large orders promptly. Catalogue sent on application. Correspondence invited.

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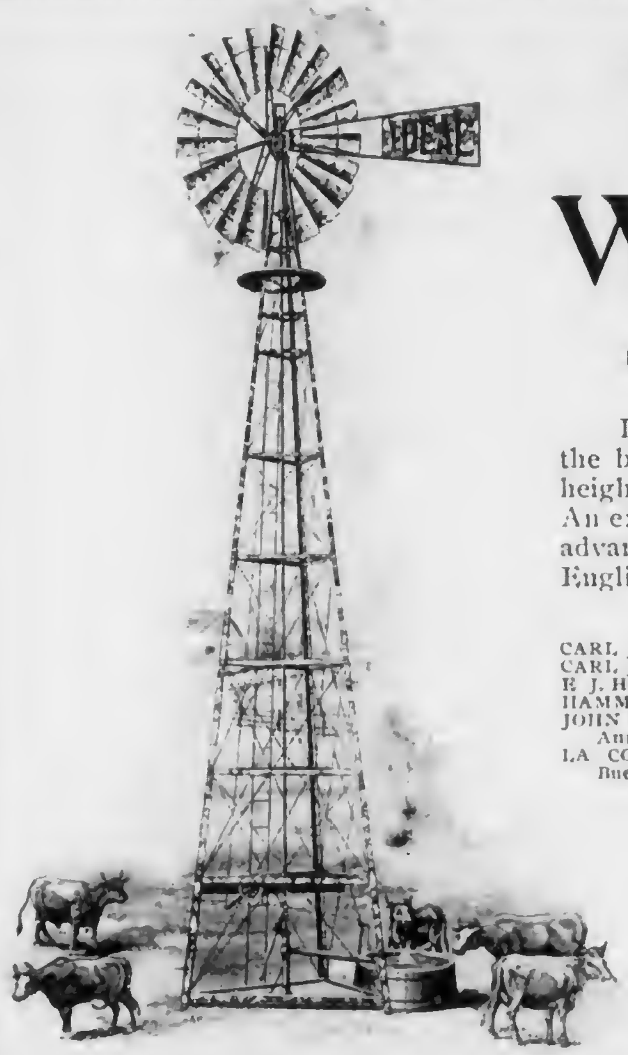

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Medal and Diploma
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MANUFACTURERS AND EXPORTERS.

"STAR" WIND MILLS

WITH BALL BEARINGS

EITHER BACK-GEARED OR DIRECT STROKE, ADAPTED FOR FARM, RESIDENCE, POWER, RAILROAD, OR IRRIGATING PURPOSES.

Municipal Plant

Suburban Outfit

Force Pump with Brass Bibb Cock in Spout

"HOOSIER" and "FAST MAIL"

Iron... Pumps and Cylinders

TUBULAR WELL TOOLS MACHINERY and SUPPLIES

Including Hand Machines, Horse Power Machines, the Hoosier Automatic Machine, Hydraulic Attachments, etc.

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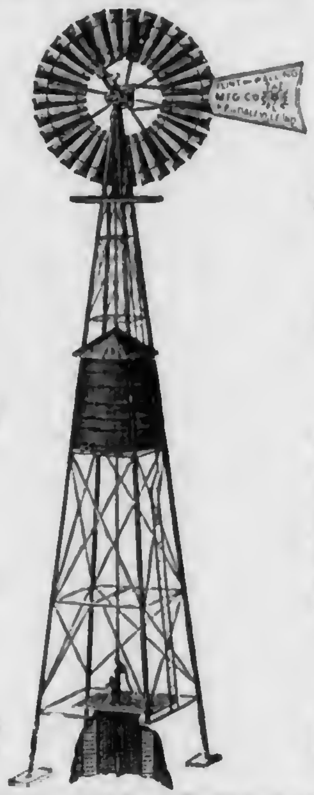
Estimates and advice furnished on application as to the erection of any Wind Mill Work or Steel Substructures.

INQUIRIES ARE RESPECTFULLY SOLICITED.


Galvanized Steel, Back-Geared, Ball Bearing, "Star" Mill.

Galvanized Steel or Wood, All Sizes, 4 to 26 foot in Diameter.

Galvanized Steel Towers, Any Height, Either 3 or 4 post, with Substantial Ladder.

BELL TOWERS FLAG TOWERS

Valves, Tubular Well Points, Drive Well Points, Working Barrels, Brass Goods, Pipe and Fittings, Hydrants and Street Washers, Hose, and all kinds of Water Supply Goods.

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Pitcher Spout Pump, with Brass Cylinder.

Ornamental Outfit

Power Mill Outfit

Bombas de Gould, movidas por Brazos y por Vapor

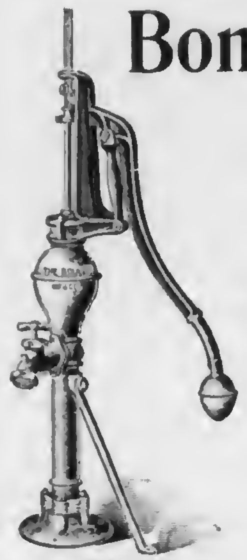


Fig. 1111.

PARA TODOS LOS USOS.

Por espacio de 50 años nos hemos ocupado constantemente en fabricar **BOMBAS Y MAQUINARIAS HIDRÁULICAS.**

Las Bombas de Goulds son el Modelo del Mundo. Las exportamos á todos los países del mundo civilizado, y nuestro surtido comprende como 1200 estilos en que se puede escojer. Podemos despachar todos los pedidos de Bombas, grandes ó pequeñas, movidas por toda clase de motores.

Escríbase pidiéndonos catálogos y presupuestos, así como los datos referentes á la economía en los fletes.

BOMBA DE TRIPLE FUERZA

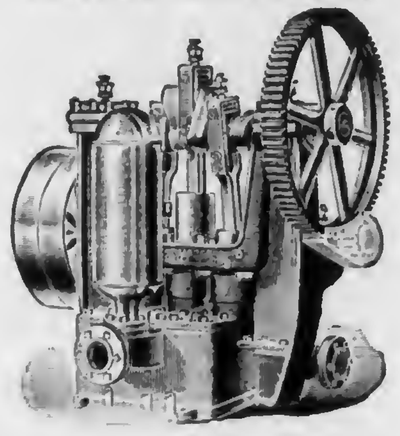
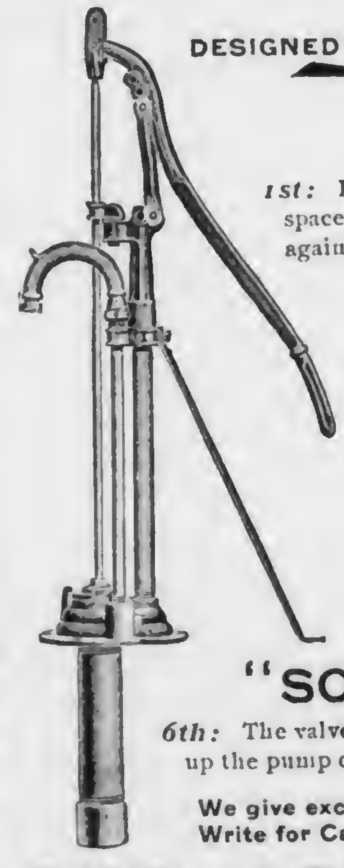


Fig. 921.

THE GOULDS MFG. CO.,
WAREROOMS (Almacenes): 16 Murray St., New York.
Seneca Falls, New York, U. S. A.

Red Jacket Force Pump



DESIGNED FOR **EXPORT TRADE**

6 POINTS 6

1st: It can be taken apart and packed in a small space for shipping, and can be easily put together again when received.

2d: It is adapted for any kind of shallow or deep wells.

3d: It is for hand or wind-mill use or can be used with other power by getting special connections.

4th: It is a double-acting force pump, and this means a division of labor in pumping or forcing water to any distance.

5th: It works easily in very deep wells on account of "no friction" in raising the water.

"SO EASY TO FIX"

6th: The valves can be taken up and fixed without taking up the pump or getting down in the well.

We give exclusive territory to Foreign Agencies. Write for Catalogue G and full particulars.

RED JACKET MFG. CO.,
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THE BARNES MANUFACTURING CO.,

MANSFIELD, OHIO, U. S. A.

Iron and Brass Pumps for ALL PURPOSES

Hand and Wind Mill Pumps,
Single and Double-Acting Thresher Tank Pumps,
Spray Pumps,
Rotary Pumps,
Centrifugal Pumps,
Artesian Well Pumps,
Heads and Working Barrels.

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Write for Catalogue and Prices.

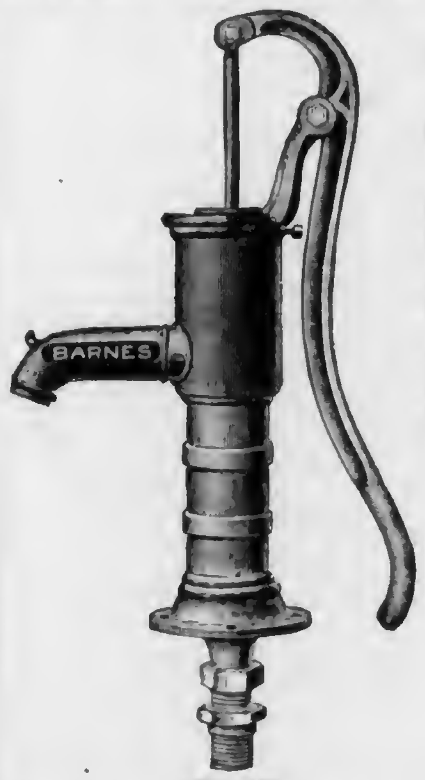

Fig. 107

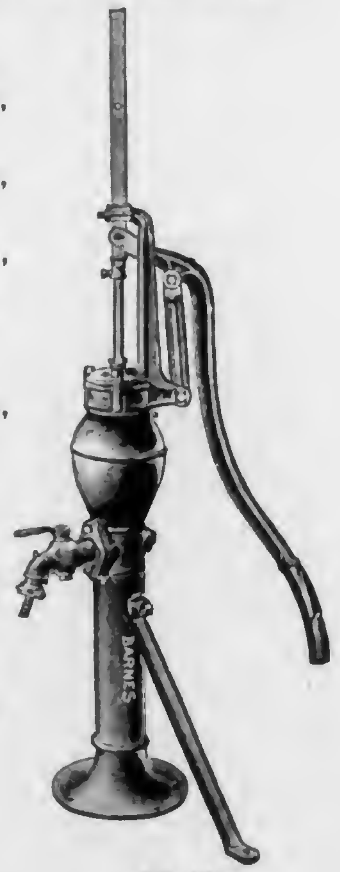

Fig. 551

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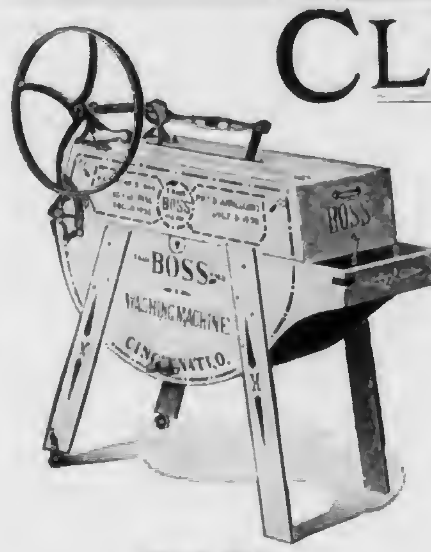

Closed View.

This machine will perfectly cleanse clothes, and in less time, and absolutely not injurious to them, and with less labor than could be done by any other method.

We are desirous of establishing local agencies in all large cities, and with this end in view, solicit correspondence. Also write us for descriptive catalogue and price-list.

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Boss Washing Machine Company,
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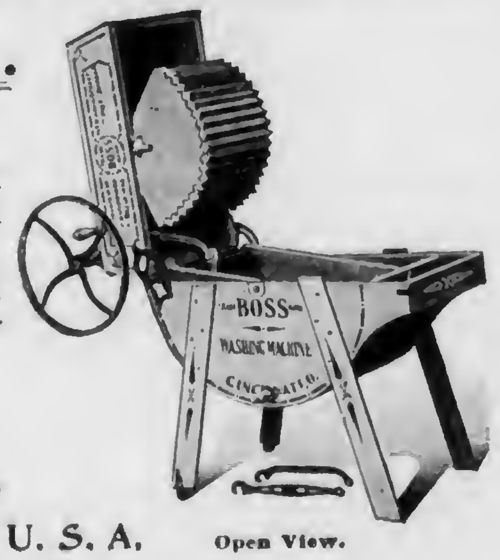
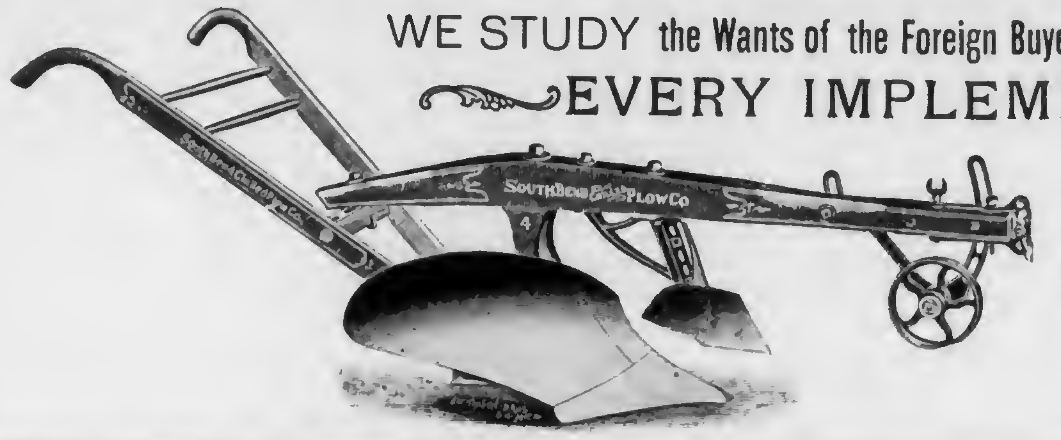


Open View.

The Best Plows Produced IN THE WORLD Are Made in Our Factory

WE STUDY the Wants of the Foreign Buyer. WE FURNISH Special Goods at Special Prices.

EVERY IMPLEMENT GUARANTEED


SOUTH BEND CHILLED PLOW CO

WE WILL PLEASE *or no pay expected.* Our large Catalogue illustrates every style plow now in use. Write for it and let us know what you want. We can furnish it to you.

SOUTH BEND CHILLED PLOW CO.,
SOUTH BEND, IND., U. S. A.

"BLACK HAWK" CORN SHELLER

ORIGINAL IN EVERY FEATURE

Never Breaks or fails to do good work.

SHELLS FAST
SHELLS CLEAN
SHELLS EASILY

Largely of Malleable Iron.

13 YEARS' RECORD

FIRST PRIZE WORLD'S FAIR

All Repairs Furnished Free

Clamps to Box No Holes to bore

All Bearings Chilled

EVERY ONE WARRANTED. BEWARE OF IMITATIONS.

Insist on having the ORIGINAL and BEST. Write for Wholesale Prices.

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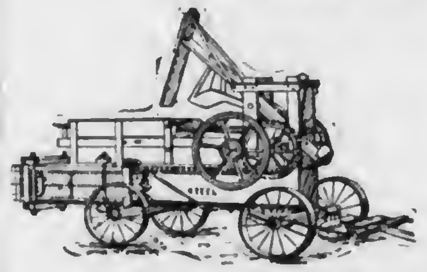
1860 DEDERICK'S BALING PRESSES 1900

For Baling Forage, Etc.



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In Wood Frame and STEEL CASE.

Hand, Horse and Steam Power Machines.

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HALLADAY STANDARD,
U. S. SOLID WHEEL,
GEM AND COMET.

PUMPS, TANKS,
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U. S. Wind Engine & Pump Co.,
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The EXPORT IMPLEMENT AGE.

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Cutaway Harrow Co.,
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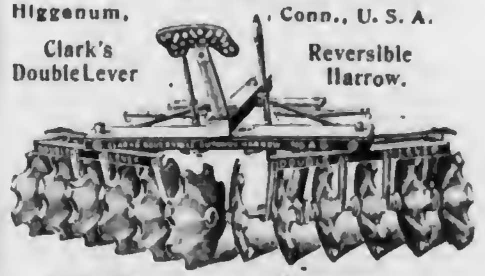
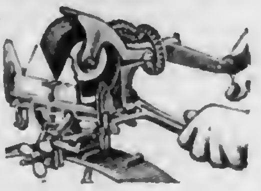
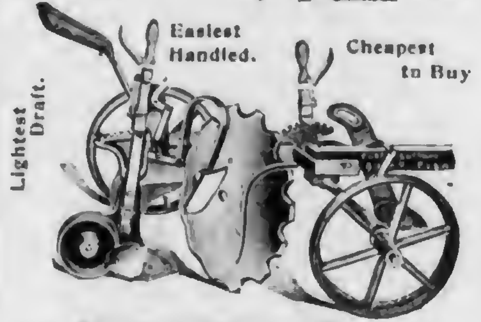




Sole Manufacturers of Dutton Mower Knife Grinder.
Clark's Sulky Disk Plow.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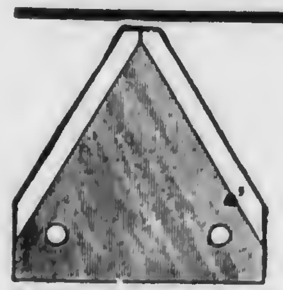

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Manufacturers of

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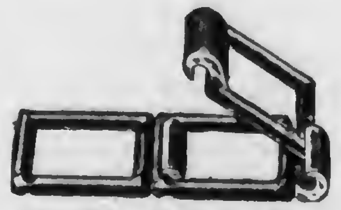

BRANCHES: Kansas City, Mo.
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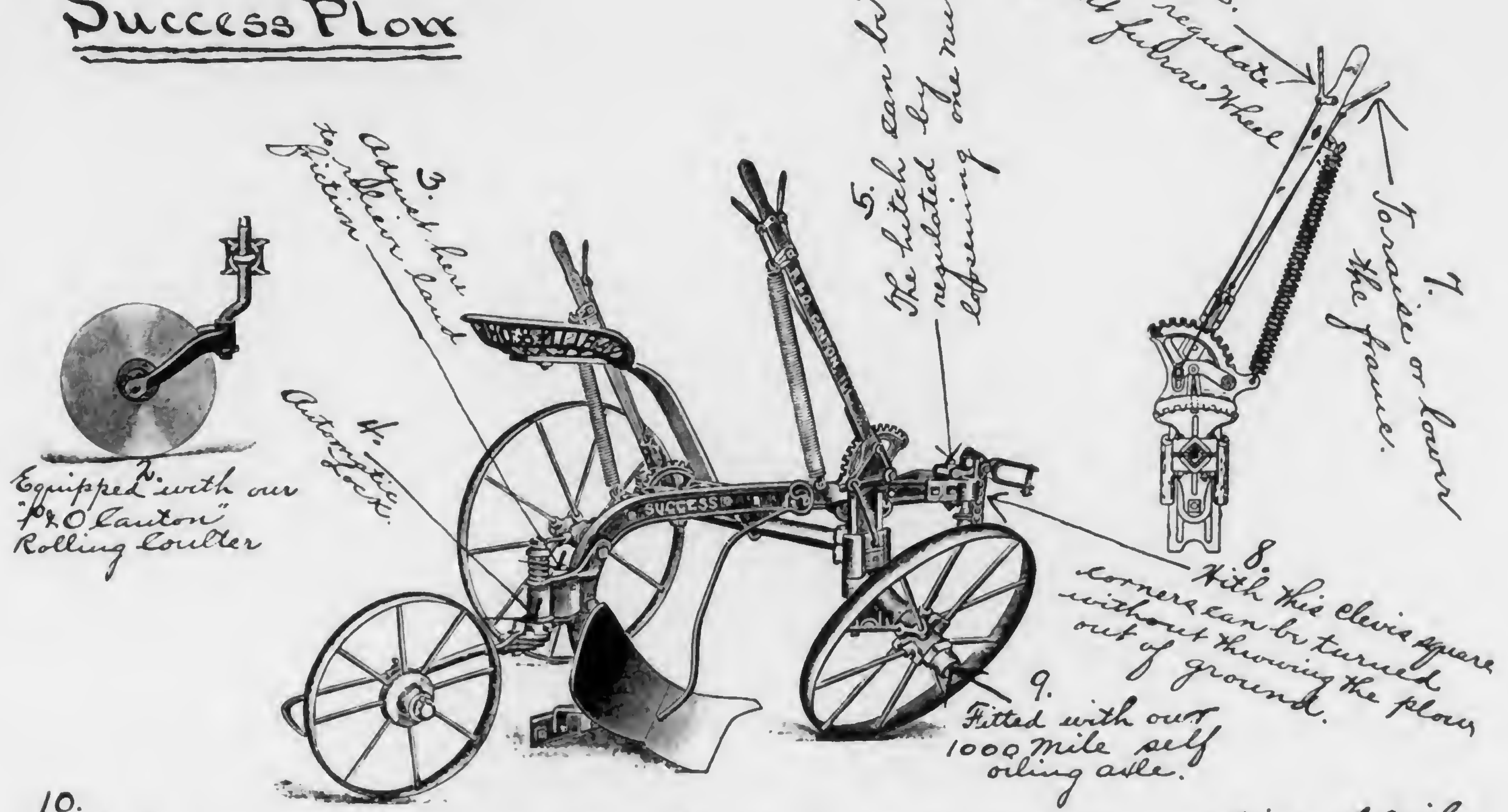
"The P&O" Co. Canton Success Plow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3. Adjust here to relieve land friction
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5. The hitch can be regulated by loosening one nut.
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7. To raise or lower the frame.
8. With this clevis square corners can be turned without throwing the plow out of ground.
9. Fitted with our 1000 mile self oiling axle.
SUCCESS
P&O CANTON ILL

10. The best general purpose plow for all countries and in any kind of soil.

A three horse evener is furnished free with each plow. Made in four sizes 12-14-16 & 18 inch cut, either right or left hand. Bottoms of all kinds made for new or old ground, stubble, sod, brush etc.

The Best Medium Priced Riding Plow Made.

Manufactured only by
Parlin & Orendorff Co.
Canton, Ills. U.S.A.

"The P. & O." Co. CANTON SUCCESS PLOW

2. Provisto con nuestra cuchilla rodante "P. & O. Canton."

3. Se arregla aquí para disminuir la fricción con el suelo.

4. Cerradura automática.

5. La bolea puede arreglarse por la aflojadura de una hembra de tornillo.

6. Para arreglar la rueda de surco en el frente.

7. Para subir ó bajar la armazón.

8. Por medio de esta abrazadera se puede girar en ángulo recto sin lanzar el arado fuera suelo.

9. Provisto con nuestro eje de lubrificación automática por 1000 millas.

10. El mejor arado por uso general para todos los países y todos suelos. Un aplanador de tres caballos se suministra **gratuitamente** con todo arado. Se construye en quatro tamaños para cortaduras de 12, 14, 16 y 18 pulgadas, á la derecha ó á la izquierda. Fondos de todo género, para suelo nuevo ó viejo, rastrojera, césped, ramojo, etc.

Los mejores arados con asiento á precio moderado.

MANUFACTURED ONLY BY

Parlin & Orendorff Co.
CANTON, ILLS., E. U.

"The P. & O." Co. CANTON SUCCESS PLOW

2. Equipé de notre coutre roulant "P. & O. Canton."

3. Ajuster ici pour amoindrir la friction avec le sol.

4. Serrure automatique.

5. Le palonnier est régable par le relâchement d'un écrou.

6. Pour ajuster la roue de sillon sur le devant.

7. Pour monter ou baisser le cadre.

8. A l'aide de ce crochet on peut tourner dans un angle droit sans faire sortir la charrue du sol.

9. Pourvu de notre essieu autolubrifiant à 1000 milles anglais.

10. La meilleure charrue à l'usage général pour tous les pays et tous les sols. Nous fournissons, **gratuitement** avec chaque charrue, un niveleur à trois cheveaux. En quatre grandeurs pour coupes de 12, 14, 16 et 18 pouces, à attelage à droite ou à gauche. Fonds de tous genres pour sol frais ou vieux, chauvres, gazon, broussailles, etc.

Les meilleurs charrues à siege, à prix modéré.

MANUFACTURED ONLY BY

Parlin & Orendorff Co.
CANTON, ILLS., ETATS-UNIS.

"The P. & O." Co. CANTON SUCCESS PLOW

2. Mit unserem rollenden "P. & O. Canton" Sech ausgestattet.

3. Hier zum Verringern der Reibung am Boden einzustellen.

4. Selbstthätiger Verschluss.

5. Das Ortscheit ist durch Lockern einer Schraubenmutter regulirbar.

6. Zum Reguliren des vorn befindlichen Furchenrades.

7. Zum Heben oder Senken des Gestells.

8. Vermöge dieses Hakens kann man scharf um die Ecke biegen, ohne der Pflug aus der Erde herauszustossen.

9. Mit unserer 1000 (engl.) Meilen selbstölenden Achse versehen.

10. Die besten Pflüge zu allgemeinem Gebrauche in allen Ländern und allen Böden. Ein dreispänniger Ebener wird mit jedem Pfluge **gratis** geliefert. Vier Grössen zu Schnitten von je 12, 14, 16 und 18 Zoll, zum Einspannen rechts oder links. Unterflächen jeder Art für neuen und alten Boden, Stoppeln, Rasen, Gebüsch u. s. w.

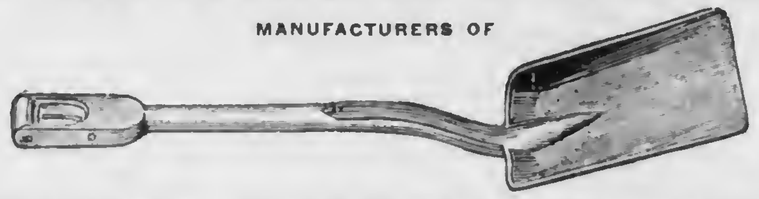
Der beste Pflug mit Fahrsitz zu mässigem Preise.

MANUFACTURED ONLY BY

Parlin & Orendorff Co.
CANTON, ILLS., VER. STAATEN.

T. ROWLAND'S SONS,

MANUFACTURERS OF



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Factory at Cheltenham, Montgomery Co., Penna.

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FORKS, HOES, RAKES, ETC.,

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WE MAKE MORE THAN

740 kinds of Forks---350 kinds of Hoes---40 kinds of Garden Rakes

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Works run continuously more than 45 years.

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FAIRMOUNT FORK WORKS

Farm and Garden Tools

Hay, Manure, Straw, Barley, Spading
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HOES and RAKES

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They are adapted to every condition and all countries.

SPECIAL SIZES AND STYLES MADE TO ORDER.

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"GENEVA" leads, others follow

In the Manufacture of Hard Agricultural Tools.
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Largest Variety.

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Every kind and of the most approved patterns. Adapted to all markets. If quality and price interest you, address

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We Manufacture for Export all Kinds of

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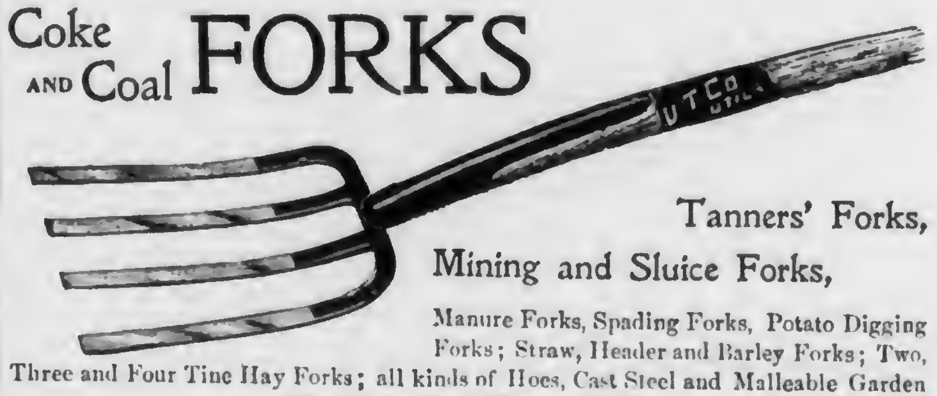

Tanners' Forks,
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Manure Forks, Spading Forks, Potato Digging Forks; Straw, Header and Barley Forks; Two, Three and Four Tine Hay Forks; all kinds of Hoes, Cast Steel and Malleable Garden Rakes, Potato and Manure Hooks.

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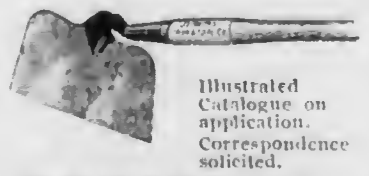

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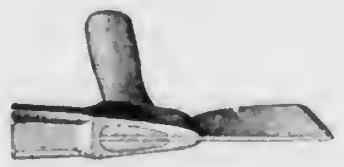
High Grade Tested Coil and Cable Chain, Iron and Steel Forgings, Coal Mining Picks, etc.



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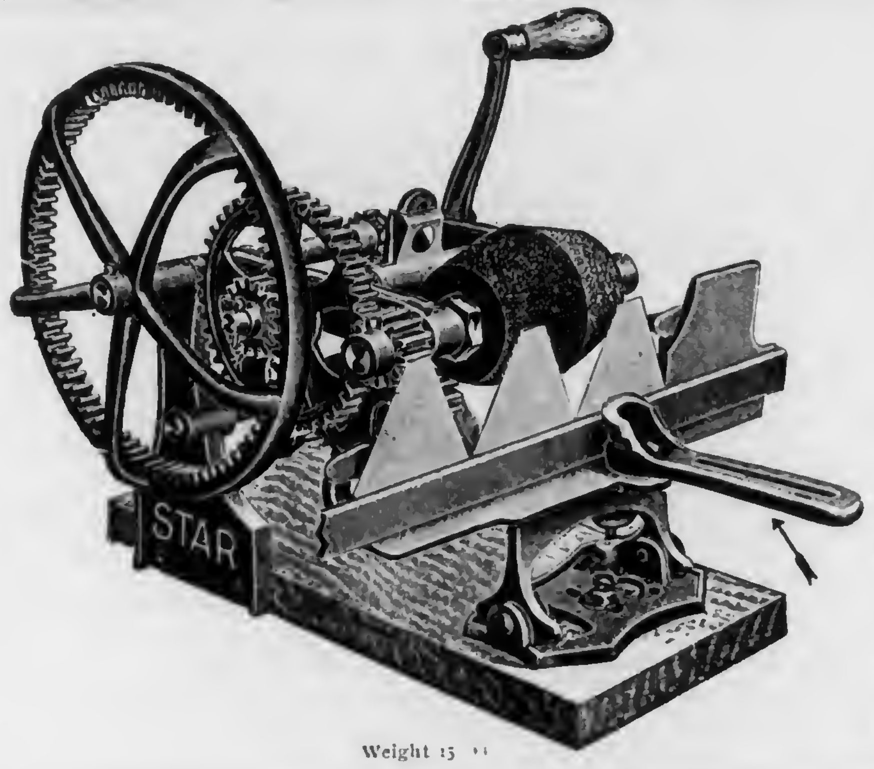


Weight 15 "

CLIZBE BROS.

* * * * AUTOMATIC * * * *

"Star" Sickle and Tool Grinder

Or MOWING MACHINE KNIFE GRINDER.

Grinds a perfect bevel on new or old knives, and positively cannot grind out heel, nor grind off the points.

Knives are set so you can see what you are doing. It grinds out the nicks.

It can be taken to the field with mower, works well on the ground, don't have to be fastened to wheel of mower.

Guaranteed to do good work when properly adjusted, and against breakage in transit. Stones are guaranteed for one year.

Our prices are cheaper than you can buy a so-called Sickle-Grinder for.

These machines are indorsed by all the leading Harvesting Machine Companies in the United States and Europe.

Write us and we will send you a handsome poster with full size cut of our Star Sickle and Tool Grinder, printed in four colors, and a catalogue and price-list of everything made in Emery Grinders and Emery Wheels.

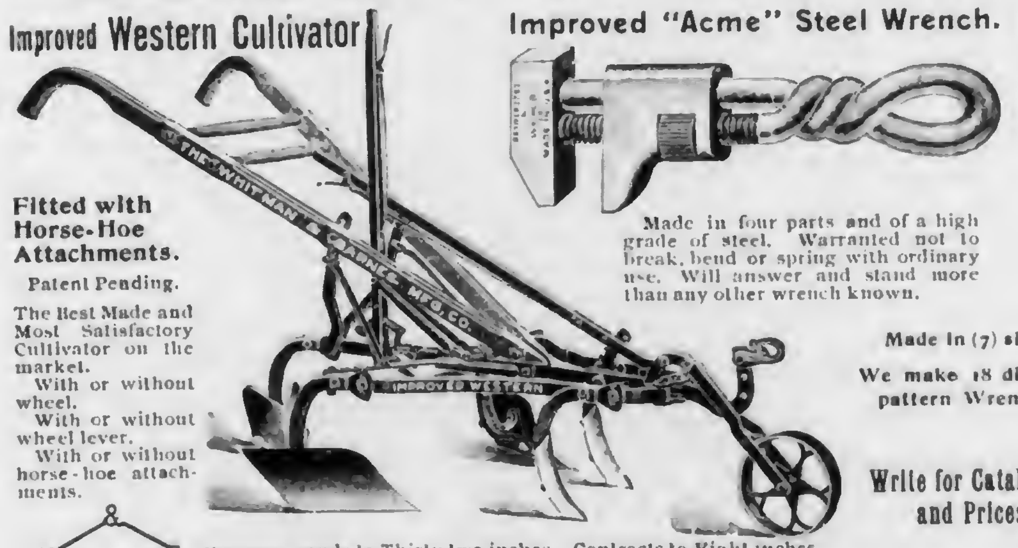
CLIZBE BROS. MFG. CO. PLYMOUTH, IND., U. S. A.

Established 1848. Established 1848.

THE WHITMAN & BARNES M'F'G CO.

Manufacturers of Mower Knives, Sections and Guards, Harrow and Thresher Teeth, Cultivators and Repair Parts, Lawn Mowers, Haying Tools, Hose, "Diamond" Knife Grinders, Grain-Drill Tubes, Link-Chain Belting, Binder Canvases and Covers, Agricultural Wrenches, Twist Drills, Files, Oil Cans, etc. A full line of Agricultural and Machinery Supplies.

Improved Western Cultivator



Fitted with Horse-Hoe Attachments.

Patent Pending.

The Best Made and Most Satisfactory Cultivator on the market.
With or without wheel.
With or without wheel lever.
With or without horse-hoe attachments.

Frame expands to Thirty-two inches. Contracts to Eight inches.

Also, "Peerless," "Norka" and "Diamond" Cultivators.

Improved "Acme" Steel Wrench.

Made in four parts and of a high grade of steel. Warranted not to break, bend or spring with ordinary use. Will answer and stand more than any other wrench known.

Made in (7) sizes.

We make 18 different pattern Wrenches.

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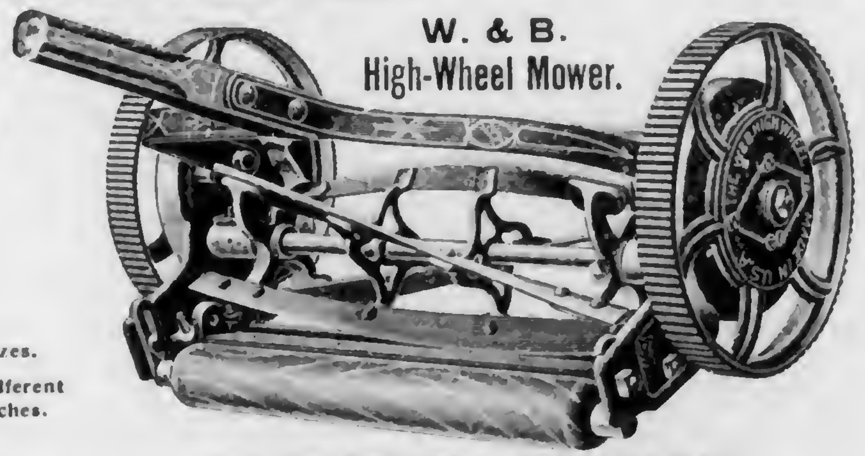
W. & B. High-Wheel Mower.



Also, "New Electric" and "Norka" Lawn Mowers.

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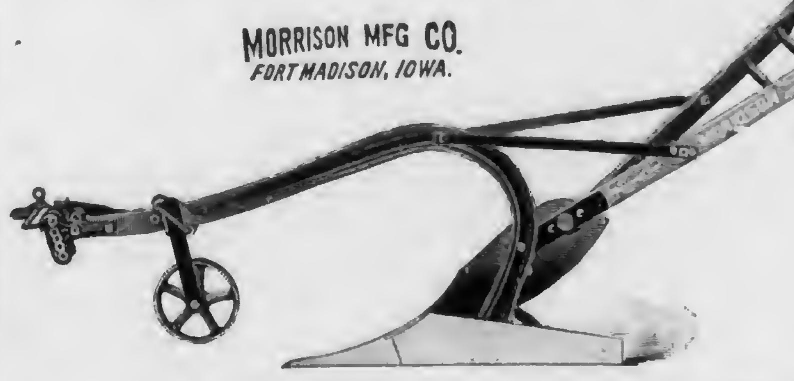
ADDRESS: 111 Chambers St., New York., U.S A.

THE HEIGHT OF PLOW PERFECTION IS REACHED IN THE MORRISON PLOW,

which has been made for nearly fifty years on the same spot. Many awards, diplomas and medals at county, state, national and international expositions attest its merits.

We are always glad to answer THROUGH OUR EXPORT DEPARTMENT any questions which are asked relative to our machinery.



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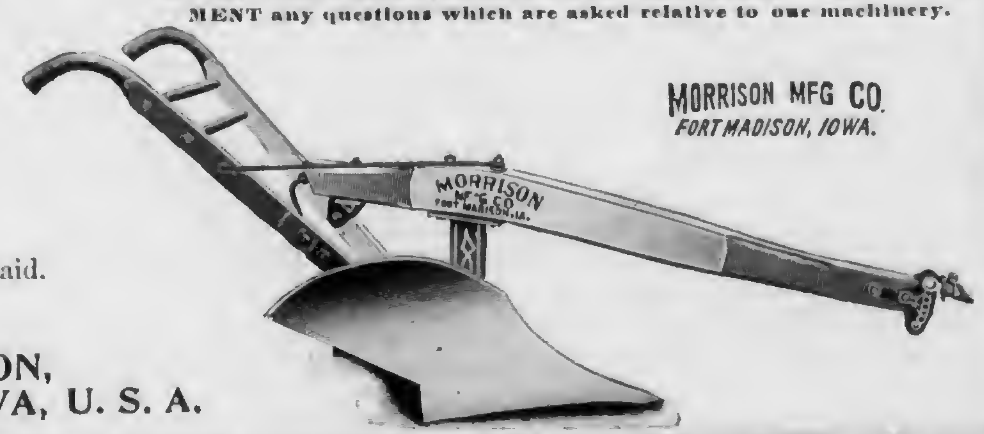

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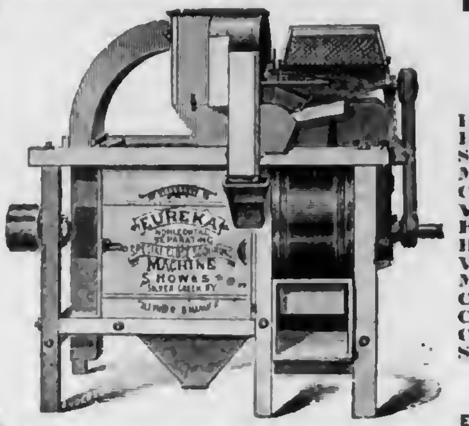

"EUREKA"

Grain, Coffee, Rice and Seed Cleaning Machinery.

- Horizontal and Upright Wheat Smutters.
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- Malt Graders and Separators.
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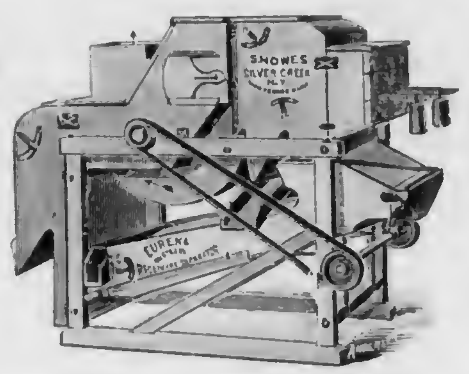

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EUREKA WORKS. ESTABLISHED 1856.

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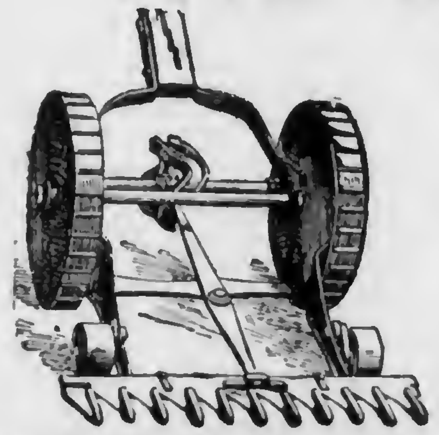

THAT WILL
KILL ALL THE WEEDS
IN YOUR LAWNS.

If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear.

THE CLIPPER WILL DO IT.

CLIPPER LAWN MOWER CO., Norristown, Pa., U. S. A.

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Established 1822.
Manufacturers of
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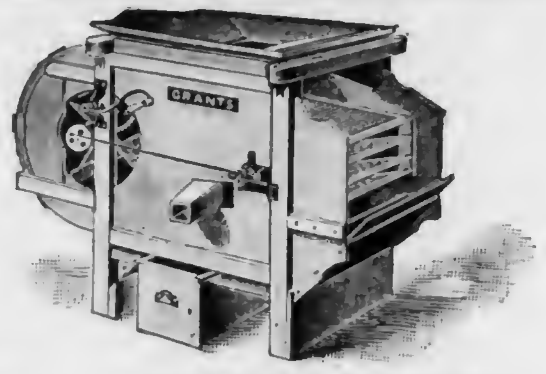
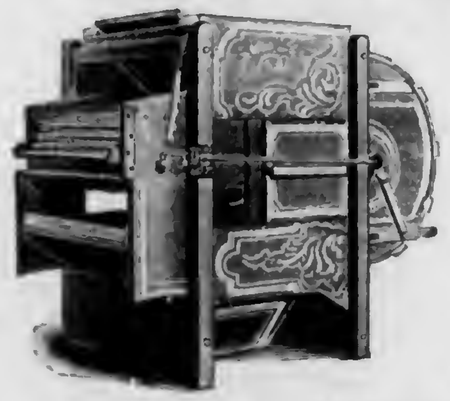
STRAIGHT STRAW RYE Threshers.



MILLS FOR CLEANING COFFEE, RICE, COCHINEAL, PIMENTO, etc.
Largest and Oldest Builders of
Fanning Mills
in the World.

The New Michael Fanning Mill



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ESTABLISHED 1858.
C. H. MICHAEL, Manufacturer of Fanning Mills exclusively.

Equipped with 9 sieves and screens, 2 zinc hurdles, a chess-board, tail-board and a spout, suitable for all requirements of a farmer.

Size: 27 inches wide, 48 inches long and 48 inches high.

Knocked down and boxed with matched lumber for export, occupying a space of thirty cubic feet.

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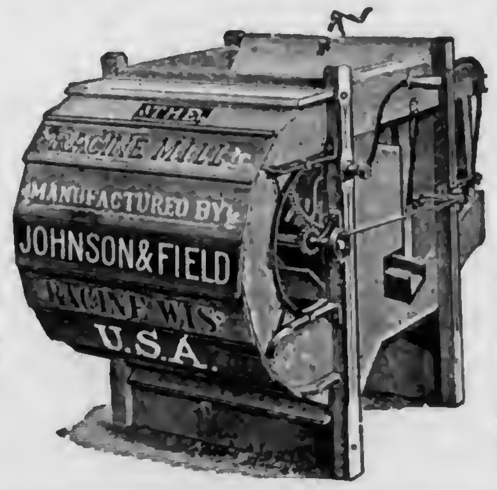

Racine, Wis., U.S.A.,
MANUFACTURERS OF
The "Racine"
Farm and Warehouse
FANNING MILLS.
FOR EXPORT TRADE

We pack three mills in each case, all parts carefully marked, total cubic space 45 feet, or 15 feet for each mill. We save you freight.

Made in six sizes for cleaning and grading wheat, barley, corn, oats, rye, and all kinds of grass seeds, beans, peas, rice, coffee, lentels, etc.

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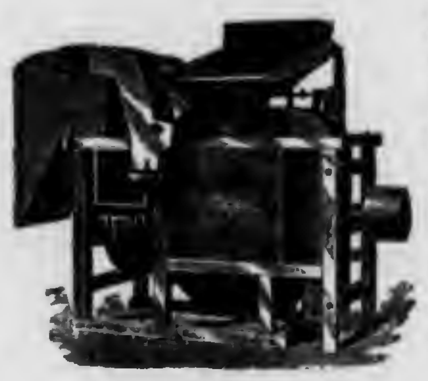
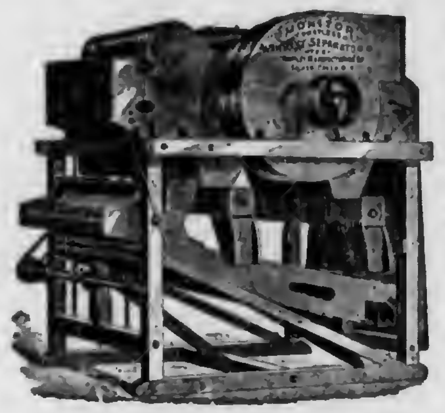
MONITOR GRAIN, COFFEE, RICE AND SEED CLEANING MACHINERY



- Wheat Scourers,
- Wheat Separators,
- Oat Clippers,
- Flax and Linseed Separators,
- Wheat Smutters,
- Barley Scourers,
- Barley Separators,
- Seed Cleaners and Separators,
- Fan Mills,
- Corn Shellers,
- Flour Packers,
- Coffee Cleaners,
- Coffee Separators and Graders,



- Coffee Milling Machines,
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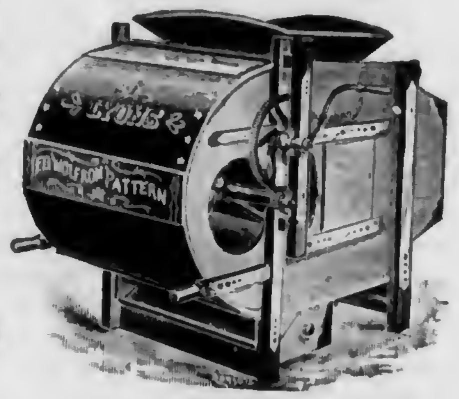
20,000 IN USE.

Used in All Countries of the World.



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Universally Registered.

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MAKERS OF **BESSEMER, SIEMENS-MARTIN and CRUCIBLE STEEL**

Largest manufacturers in the world of WIRE RODS; ANNEALED, GALVANIZED, COPPERED and TINNED WIRES for all purposes; PURE COPPER WIRES, INSULATED COPPER WIRES and CABLES of all kinds and sizes; IRON and STEEL HORSE SHOES; WIRE ROPES; FLAT and ROUND SPRINGS; BARBED WIRE; WIRE NAILS and STAPLES; WOVEN WIRE FENCING

**STEEL PLATES and SHEETS of every grade--STEEL BARS of all shapes.
STEEL AGRICULTURAL and MACHINERY SHAPES.**

COLD DRAWN SHAFTING, HOMOGENEOUS STEEL, HOT ROLLED STEEL SHAFTING { ROUNDS, SQUARES, HEXAGONS FLATS AND ODD SHAPES.

Styles of Packages.

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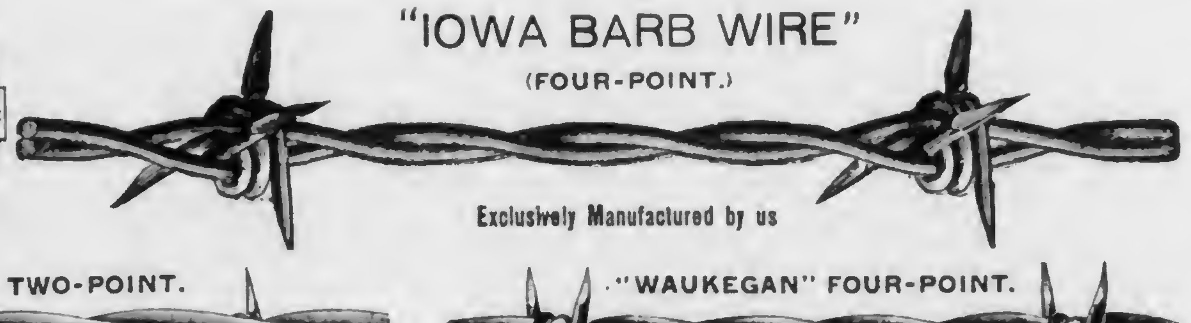

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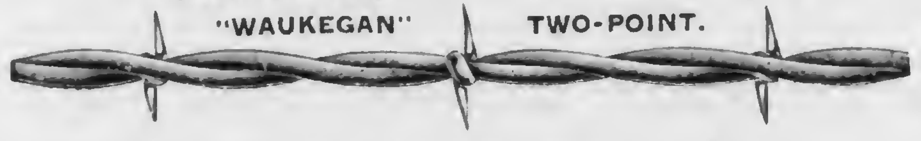
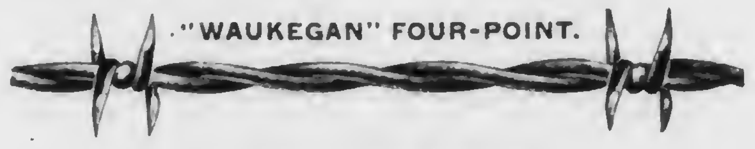


"WAUKEGAN" FOUR-POINT.



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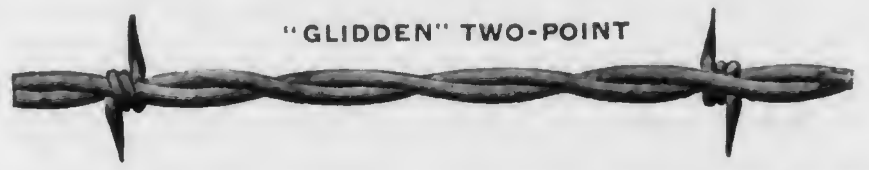

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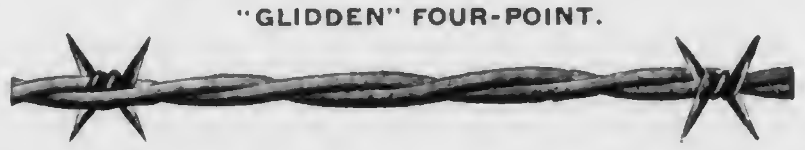
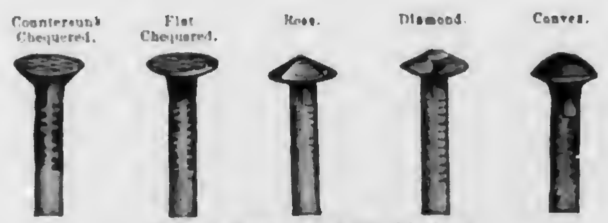


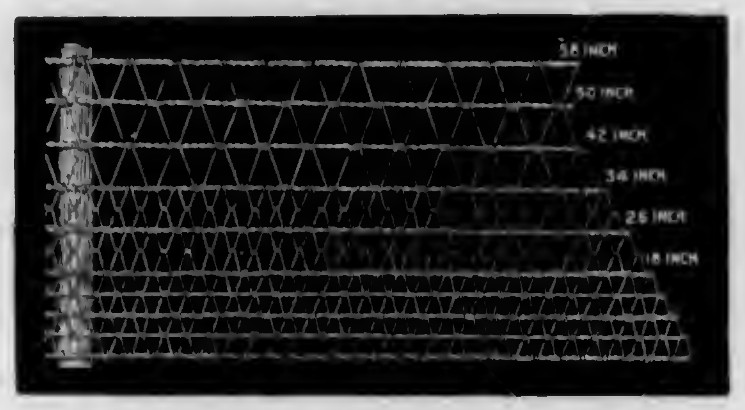


Some Special Nail Heads.

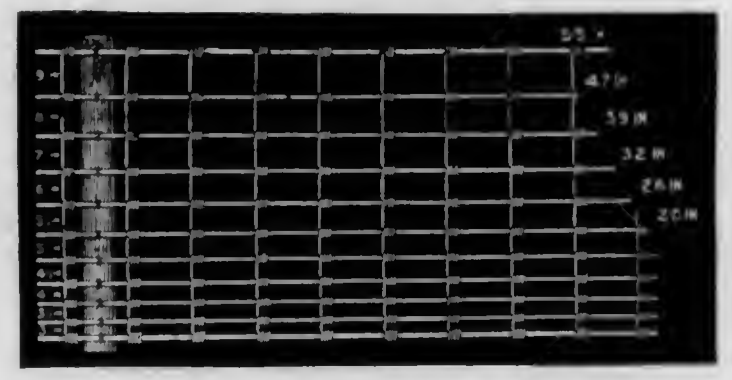
WIRE NAILS. Round, Oval or Square Wire.

Every Style of Head or Point. Our Nails are Guaranteed First-class in every respect, and will be found Stiffer, Stronger and Better made than European Nails. Packed in wooden kegs and cases, canvas bags and paper parcels of various sizes.

WOVEN WIRE FENCES. All made of Hard, Strong Steel Wires, heavily Galvanized.



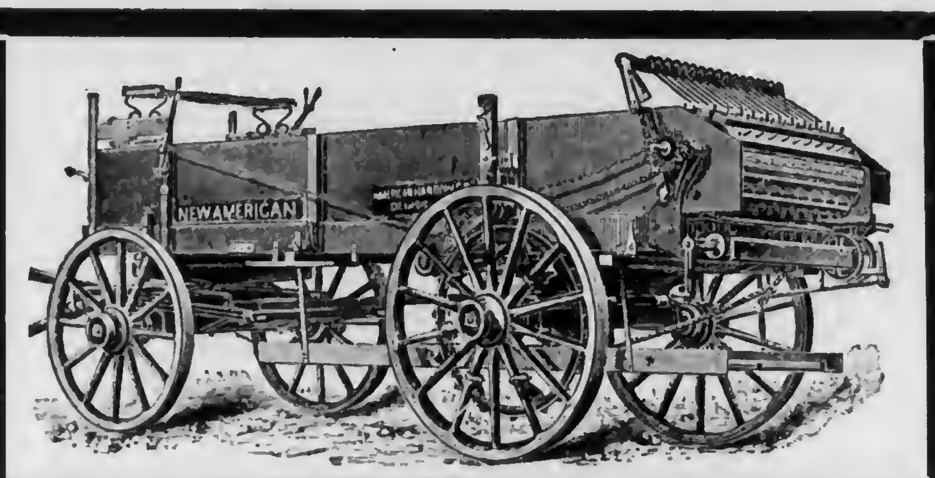
ELLWOOD Steel Fences—6 heights, 6 styles.



AMERICAN Field and Hog Fences—6 heights, stays 12 in. or 6 in. apart.

The wires in these fences are large enough for all ordinary requirements, the fences being cheap, durable and efficient—will last a lifetime. Put up in rolls of 20 and 40 rods—sold by the rod. Perfectly adapted to fencing railroad rights of way, farms, fields, orchards, vineyards, etc.

Write for prices, catalogues, etc., covering any of the above, to our offices at 71 Broadway, New York, U. S. A. 29 Great St. Helens, London, E. C. **AMERICAN STEEL AND WIRE CO.**



VICTOR HUGO said
that Paris wastes 5,000,000 francs a year through her sewers.

Or enough valuable fertilizer to enrich the whole soil of France.

Animal manure is Nature's most precious tonic for overworked land.

Then is it not foolish to spread it wastefully and improperly by hand? It covers less acreage; it is harmfully thick in spots, while neglectfully scant in other spots; it requires too much labor; it is slower work; the benefit is less.

The New American Manure Spreader

chops any manure into fine, medium or coarse bits, and spreads it precisely as thick or thin as wanted. You change the quantity while driving along. It is the only Spreader that can be regulated from first to last while operating and while you are on the seat.

You can buy our New American to fit your own wagon truck.

Or with any truck built.

Or with your own truck

It's the Spreader of America. We want to make it the Spreader of Europe.

Send for Handsome Catalog

Harrows, Cultivators, Discs, Planters, Bean Harvesters, Stalk Cutters, Seeders, Road Levelers and Bicycles.

VICTOR HUGO dit
que Paris gaspille 5,000,000 francs par an qui passent par les égouts.

Ou bien assez d'engrais precieux pour enrichir le sol tout entier de la France.

L'engrais animal est le tonique le plus précieux de la Nature pour le sol surmené.

N'est-ce donc pas bête de le répandre à la main, d'une facon gaspilleuse et impropre? Il couvre ainsi un terrain moins grand; à certains endroits il est épais au point de nuire, et à d'autres il est par trop clairsemé: il faut trop de travail; c'est un travail trop lent; le bénéfice est moins grand.

Le Nouveau Distributeur D'Engrais Américain

hache l'engrais en morceaux fins, moyens ou gros, en le repartissant tout juste comme on le désire, épais ou en couches légères. Vous changez de quantité en avançant. C'est le seul Distributeur pouvant se régulariser d'un bout á l'autre de l'operation et pendant que vous restez assis sur votre siège.

Vous pouvez acheter notre "Nouvel Américain" de la taille de votre train de charrette.

Ou pour un train de voiture quelconque.

Ou bien sur notre train à nous.

C'est le Distributeur de l'Amérique. Nous désirons qu'il devienne le Distributeur de l'Europe.

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AMERICAN HARROW COMPANY
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The Immense Factory Owned and Operated by

The Oliver Chilled Plow Works

Continues as Usual to Turn Out the Best Plows Made.

Europe, Asia, Africa, Australia, North and South America, and the Islands of the Sea compliment us by using our

WORLD RENOWNED CHILLED PLOWS.

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Oliver Chilled PLOWS Are the Best on Earth.

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The No. 40 Series Full Chilled Sloping Landside. Wood and Steel Beam.

Nos. 98 and 99 Oliver Steel or Wood Beam Combination Plow. With Reversible Point and Wing. Self-sharpening by use.

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Oliver Chilled Plow Works,
South Bend, Indiana, U. S. A.

EXPORT IMPLEMENT AGE.

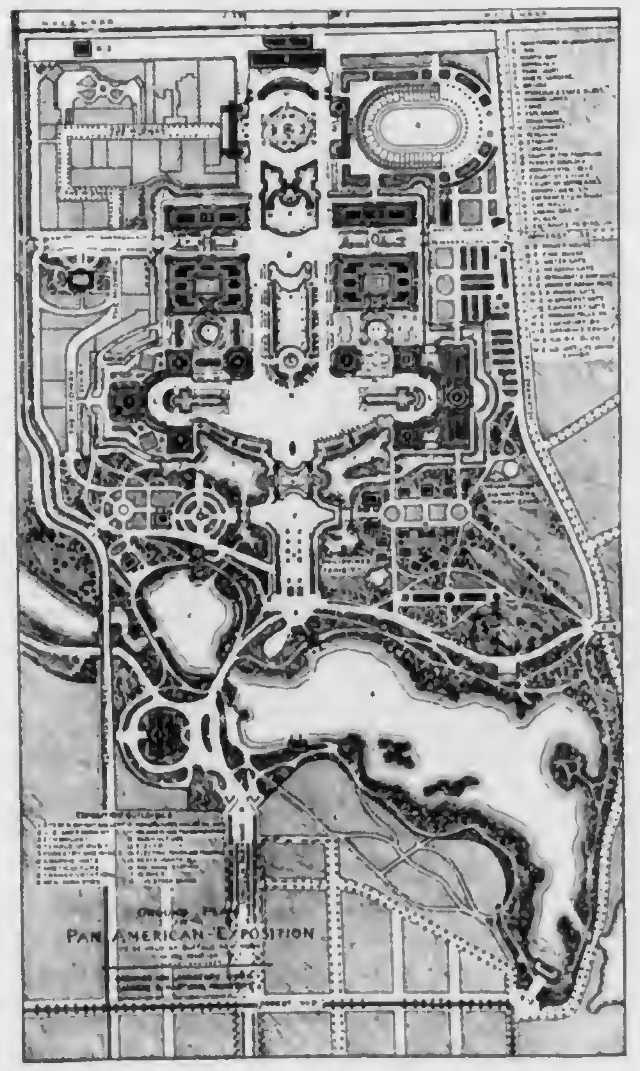
Vol. III. Philadelphia, Pa., U. S. A., December, 1900. No. 3.

THE EXPOSITION of 1901

An Enterprise of Vast Proportions and Unparalleled Magnificence at Buffalo.

The Pan-American Exposition will be held in the city of Buffalo during the season of 1901. The gates will open on May 1st, and the Exposition will continue six months. It is estimated that the total cost of the Exposition, exclusive of exhibits, but including the Midway, will be about $10,000,000. It is intended that this Exposition shall be the most artistic creation ever produced for a like purpose. It will surpass all former enterprises of this sort in a number of very important features. These are: First, the court settings, there being more than thirty-three acres of beautiful courts. This is approximately two and a half times greater than the area of the courts at the World's Columbian Exposition at Chicago. The second point of superiority is in the hydraulic and fountain effects, there being in all the courts large pools of water into which hundreds of fountains will throw their sparkling streams. As a third feature, may be mentioned the horticultural and garden effects. In all the courts and upon the grounds outside the buildings will be a very elaborate decorative arrangement of beautiful lawns and gardens. As a fourth feature, may be noted the plastic ornamentation of the buildings, which is very intricate and beautiful. All the buildings are to be covered with staff, which is molded into thousands of beautiful and fanciful shapes. To this feature will be added the most magnificent display of original sculpture ever used for decorative purposes of any Exposition. These wonderful productions are the work of thirty or more of the most noted sculptors of America. There will be more than 125 grand works of this character. As a fifth feature, will be the color decorations. Never before at any Exposition has an effort been made to produce a harmonious color scheme. All of the great buildings will be decorated in harmonious tints and the effect upon the eye will be very beautiful. Crowning the achievements of the architects and artists, the sculptors, the landscape architects and the hydraulic engineer will be the work of the electrician. It is he who will complete the magnificent picture when at night he imparts the exquisite radiance of wonderful electric lighting effects to the marvelous picture. More than 200,000 electric lamps will be used in the illumination of the courts of the Pan-American Exposition. Never before has such a work been undertaken upon so grand a scale.

In all the exhibit divisions the Pan-American Exposition will be very complete. It is the aim of the Exposition to show the progress of the Nineteenth Century in the Western world. The exhibits will be gathered from all the principal States and countries of the Western Hemisphere and the new island possessions of the United States Government. Special efforts are being made to bring together exhibits of exceptional novelty and of the highest educational value.



The Machinery Building covers an area of about four acres, and will contain a very wonderful display of modern machinery of American invention, showing the progress that has been made within the last few years. The large amount of automatic and special machinery used in American factories and mills will form a most interesting study to all who are interested in the products of the Western world. The transportation exhibits will include all of the very latest specimens of locomotives, cars and railroad appliances. These will be sheltered in a special building in connection with the large railway station at the northern end of the Exposition grounds. The ordnance exhibits will be made in connection with the machinery exhibits, and will show very remarkable progress in the manufacture of ordnance in the Western world. This department is distinct from the war and naval exhibits of the Federal Government, and will be sheltered in a special building.

At the Pan-American Exposition will be shown the largest display of electrical machinery and appliances ever presented. Nearly every article will be of the very latest design, and the visitor may expect novelties without number in this interesting division. The Electricity Building is of very rich and beautiful design, having a broad loggia on the southern side while the roof line is broken with domed towers.

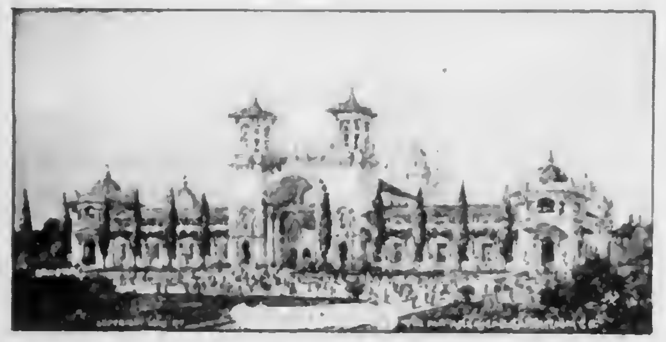
The Electric Tower, 375 feet high, will be the center piece of the exposition. The beauty of this tower is beyond description. The entire exterior is of richly molded work and many costly groups of sculpture will adorn it at salient points. It will stand in a broad basin and from a niche in its southern face will gush a cascade 30 feet wide and 70 feet high. The illumination of this tower at night will be particularly beautiful and wonderful.

In the Stadium will be seats for 12,000 people. It contains a quarter mile racing track and ample space for all the popular athletic games. Here also will be the displays of livestock, automobiles and other road vehicles, farm and road machinery in motion. The large space beneath the seats will be used for exhibits.

This picture of a corner of the Stadium shows the massive and beautiful character of the architecture. This will be a very large structure and during the exposition season there will be held an athletic carnival of particular interest. The entrance to the Stadium is a large building having an arcaded arrangement on the ground floor. The upper floors are to be used for restaurant purposes.

The illustration herewith shows the western end of the Propylæa. This is an architectural ornament of very beautiful and imposing design. It marks the northern boundary of the Plaza, and is designed as a screen, separating the Exposition from the noise and smoke incident to the traffic of steam railways which pass the Exposition grounds upon the northern side. The Propylæa is 500 feet long with a massive towered entrance at each end.

The United States Government is spending $500,000 upon its group of three great buildings and the exhibits to be contained in them. The several departments of the government will make very complete displays, and in addition to these will be new exhibits from the Hawaiian and Philippine Islands, Tutuila, Guam, Porto Rico and Cuba. Among the more important features will be the great exhibit of fishes, the Weather Bureau, exhibits from the Mint, naval and war exhibits and many others. Of particular interest will be the big gun exhibit—a group of three immense pieces of ordnance being mounted immediately at the north of the main Government building.


Electricity—Pan-American Exposition

This illustration shows the court designed for the Machinery and Transportation Building. It is one of the many beautiful features of the Exposition, consisting of an open space, made brilliant with flowers, and a sparkling fountain in the center of a cool and clear basin of water. About this court will be arranged comfortable seats where the visitor may rest and enjoy the beauty of the shrubs and flowers.

THE AMERICAN NATIONAL ASSOCIATION.

On Wednesday, October 31st, the members of the "National Association of Agricultural Implement and Vehicle Manufacturers" of the United States convened at Milwaukee, Wis., U. S. A., and for three days discussed matters of importance to the trade. The association was organized in 1894 with a membership of 110 active members. This number has increased to 258, and during the next year many more will be added. As the entire number of firms considered desirable for active membership is 498, it will be seen that the association is strongly representative of the trade, its members being of the class who are foremost in energy and farsighted and liberal in policy.

Among questions which were brought up for discussion and for definite action upon, were the reclamation of the arid lands of the United States; the coöperation of the association with the various dealers' organizations; the payment of freight on defective goods; the corporation laws; freight and passenger transportation, etc.

A representative of the National Federation of Retail Implement Dealers' Associations was present upon invitation of the association and presented to the manufacturers the position of the dealers upon various customs of the trade. The association's legal adviser, one of Chicago's prominent lawyers, addressed the convention on the interpretation of the foreign corporation law which has caused much confusion among manufacturers everywhere in the United States.

The freight transportation committee gave a detailed account of their work with the railroads and recommended vigorous action in the line of decreasing freight on export shipments. The members of the association have been saved thousands of dollars by the watchfulness of their freight and passenger transportation committees.

An elaborate program for the entertainment of the visitors during their stay in the city was provided by the citizens of Milwaukee.

The next annual convention will be held in Kansas City, Mo., U. S. A.

AMERICAN STEEL IN THE WORLD MARKETS.

The United States is now the world's greatest producer of iron and steel and coal, as well as of copper, cotton, breadstuffs, provisions and many other articles entering into the daily requirements of man. In a comparative survey of the world's iron-ore situation, the remarkable fact is brought out that the United States in 1899 produced 30 per cent. of the world's ore, or 25,000,000 tons out of a total of 85,000,000 tons. This quantity is somewhat less than the combined ore output of Great Britain and Germany, including Luxemburg, which produced respectively, 17 per cent. and 21 per cent. of the world's ore supply. This country produces 32 per cent. of the world's output of coal, while Great Britain produces 30 per cent. and Germany 19 per cent. This primacy in raw materials gives the United States a self-sufficing position, as compared with that of her foremost rivals—Germany and Great Britain. While the Dortmund, Germany, furnaces have to go to northern Sweden for iron ores and the furnaces of Cleveland, England, have to get their ores from northern and southern Spain, the United States is far freer to locate her iron and steel industries with direct regard to the conditions of maximum economy in the accumulation of raw materials and the distribution of the finished products. As coke has displaced coal, the tendency the world over is for the furnace to leave the colliery and move toward the ore mines. Hence the iron and steel industries of this country are gradually being drawn around the southern shores of Lake Erie within easy access of the vast ore deposits of the Lake Superior mines. The predominance of this single source of ore production is apparent from the fact that the Lake Superior region furnished 73 per cent. of the 25,000,000 tons of ore consumed by our furnaces in 1899, while the Southern States furnished 19 per cent. and the Eastern States but 8 per cent. One of the most wonderful developments in modern trade is that of the ore-handling facilities from the Lake Superior mines to the furnaces of Ohio and Pennsylvania.

Stadium—Pan-American Exposition.

Among the world's great pig-iron producers the United States first attained the leadership in 1890. In 1894 she lost it to Great Britain for the time being, but in 1895 the United States finally outranked the United Kingdom. In 1899, the five great pig-iron producers stood in the following order of importance:

	Tons.
United States	13,620,703
Great Britian	9 305 319
Germany	8,142,017
Russia	2,672,492
France	2,567,388

There are other nations to be mentioned, such as Austria-Hungary and Belgium, each of which produces a million tons, and Sweden, whose output is half a million. We are also the greatest consumers of our iron and steel products. The development of a domestic consumptive capacity has been a feature of the national policy toward the iron and steel trade. It has been followed by the growth of a national demand unequaled by any other nation. The volume of demand thus developed has resulted in that gradual reduction in the cost of production which has brought this country fully equipped to enter the world's markets on a level with the best of her rivals.

Machinery—Pan-American Exposition.

Her position in the world's markets is not ephemeral but enduring, because it is based on a highly developed and rapidly enlarging home market such as no other nation now enjoys.

The growth of the steel industry and the transition from the iron to the steel age is

indicated by the substitution of steel rails for iron rails in railway building. Here again the United States holds the primacy, producing almost 40 per cent. of the world's steel output, while Great Britain produces 18½ per cent., and Germany 21 per cent. Of the world's pig-iron output, 40,000,000 tons, 70 per cent., is made into steel; whereas this country converts 77 per cent. of its pig-iron tonnage into steel, amounting to 10,636,858 tons out of the world's total output of 27,110,000 tons. The United States is the foremost steel-consuming country of the world, a single city having consumed 125,000 tons in a year for building purposes alone, and one car company having required 400,000 tons of steel to meet its yearly contracts. In 1879 about one-third of our pig iron was made into rails, but since that date steel rails have ceased to be the chief form of steel production, their proportion in 1898 being one-sixth of the whole. The consumption of steel per capita for non-rail uses in 1879 was 75.4 pounds; in 1889, 213.2 pounds; in 1898, 276.2 pounds.

Niagara Falls—Pan-American Exposition.

In our iron and steel trade with foreign countries covering the last twenty years our position has been exactly reversed. Within the last five years we have changed from an importing to an exporting nation. In 1880 we imported five times as much in value as we exported of iron and steel products. Now we export six times the value of our iron and steel imports. These exports in 1900 aggregated $121,858,341, ranking next to breadstuffs, cotton and provisions, the three higher in value. There are in the iron and steel exports twenty-one classes valued at from $1,000,000 to $9,000,000 each.

These facts and relations give the iron and steel trade an economic outlook such as has never before been attained. While Great Britain and Germany are still leading us as exporters of iron and steel of certain classes, our experience at home in adopting machinery and implements and other forms of steel products to the varied conditions of our vast territory has prepared us to adapt our products to the conditions of climate and the wants of consumers the world over. We have prospered hitherto by reason of the high efficiency of labor, by the superiority of our industrial organization and by continuous progress in technical invention. But other nations are learning our secrets of success. Other nations are imitating our methods and making modes of our machinery and tools in order to overcome the advantages we now have over them. Prussia and Bavaria, France and England, all import our railway engines only to pick out their excellences and then incorporate these into their next new types to be made at home. The policy of the future must take this fact into account, and the only way to meet it is by a restless progress in productive processes at home, a systematic study of the conditions and requirements of American iron and steel products abroad, and a more considerate cultivation of the consumer than has hitherto been the case. With proper exceptions consumers have heretofore bought our products on their merits without solicitation from us; but as our competitors learn to incorporate these merits into their own makes, our position can be secured and improved upon in the future only by aggressive methods in which the commercial and the consuming interests of the foreign trade are made to realize our readiness to meet their conditions with a superior product. Hence the main problem of the American iron and steel trade is now not industrial, nor financial, but commercial. Our pig iron trade with Europe, for example, is limited by the quantity of bottoms offered it as ballast in cotton cargoes. Everywhere, too, our foreign trade suffers for want of trained commercial representatives. Our greatest commercial needs, as has been well said, are ships and schools.

Electric Tower—Pan American Exposition.

With the close of the Boer war South Africa will open up inviting opportunities to the implement manufacturer.

FREIGHT RATES AGAINST THE BRITISH.

An American manufacturer remarked the other day: "I know a firm on tidewater in Great Britain which buys thousands of tons yearly of malleable iron castings from a firm at Pittsburg, Pa., U. S. A. The nearest malleable iron foundry to this British manufacturer in his own country is but 70 miles away, yet the freight rates by rail from Pittsburg to New York and by steamship from New York to Great Britain are, in the aggregate, lower than the freight rates by rail from the foundry 70 miles away from the manufacturer. This explains one reason why American export trade is so rapidly growing abroad. There are no better steam railroad men and traffic managers in the world than the Americans."—"The Iron and Coal Trades Review," (London.)

A Tropical Court—Pan-American Exposition

The largest cornfield on earth is located near Ava, Ill., U. S. A. It is 6,000 acres in extent, and every foot of it was covered this season with growing corn. Only a few years ago this field was covered with water, and was known as "Big Lake." A ten-mile ditch, leading to the Mississippi River, was built to drain the lake, and the land now yields more than seventy-five bushels of corn to the acre.

The farmers in the United States coöperate and build their own butter factories, some factories handling the milk from several thousand cows. The cream separator is an indispensable article to the American dairyman, and should be used in all countries where dairying is practical.

New York State Building—Pan-American Exposition.

EXPORT IMPLEMENT AGE

FOR CIRCULATION IN FOREIGN COUNTRIES ONLY.

An Independent Journal devoted exclusively to the Export Trade in Agricultural Machinery, Pumps, Wind Mills, Farm Tools and Dairy Supplies.

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Vol. III. Philadelphia, Pa., U. S. A., December, 1900. No. 3

Under no circumstances do we allow commissions to advertising agents.

The Steamer Helenes, which left New York for Argentina a few days ago, had on board a very large stock of agricultural implements. Argentina leads in this respect. Other South American countries are making steady headway.

The implement export statistics show that while the United States is gaining there is room for enterprising men in every country of Europe and Central and South America and elsewhere to extend the implement business in lines of United States manufacture. The advantages are being seized and agriculture along more economic lines is increasing.

One of the coming factors that will assist implement agents in introducing implements in foreign markets is competition—the competition of farmer against farmer. The force of this factor is now particularly shown in German beet sugar cultivation. The same spirit of competition will extend into other channels of agriculture. The outcome is that the farmer will ere long recognize the need of possessing the best implements for his especial need. Economy of production is the ever-present problem, and the best implement or machine contributes most to that result.

One of the first influences exerted on visitors to the Paris Exposition was to know something more about the makers of the exhibited products, and many of those who examined the American agricultural exhibits felt and expressed a desire to learn more of the country and people who could send such evidences of skill. Many sales of implements were made to European agriculturists and the goods have been delivered. If our friends abroad will now closely follow up these advantages and spread a knowledge of American makes of implements and American methods and capabilities, it cannot help but result in trade and profit to all concerned.

With the dealer abroad it is no longer a matter of discussion as to the worth, merit, result and demand of America-made farm machinery, but it is a matter of interest to him to get hold of a reliable line of that machinery to handle and sell.

There is at present in the United States a dual tendency which all dealers in countries beyond the seas should note, one being upward tendency in prices, due to advancing wages and heavier home demand, and the other a downward tendency due to expanding productive capacity. Dealers in implements should note how this dual tendency will affect their interests. One effect is to force manufacturers who have a reputation to defend themselves, to make better implements, to use better lumber and steel, and to improve the quality in every detail. The resultant of these two forces is to give buyers better quality. But little room for a decline in prices remains. The coming six months will afford exceptionally good opportunties to purchase.

The "Star of England," which left New York for Australia recently, carried $58,000 worth of American hardware, which is a great deal of hardware to send in one ship. The leading importing firms of Sydney and Melbourne have their agents in the United States buying in large quantities. Here is a hint to dealers in implements throughout the world. If they could manage to be represented by one who knew how to supply their wants, much more rapid progress would be made in introducing American implements throughout the world. There are hundreds of dealers who would like to sell ten American implements where they sell one. More direct connection is necessary, and it is possible to establish it. Too many excellent opportunties to make sales of American implements are being lost through the absence of the proper connection between the dealer in other countries and manufacturers in the United States. The "Export Implement Age" proposes to lessen such difficulties.

Unsettled freight rates across the seas has been one of the difficulties which have beset our friends in other countries who are seeking to introduce United States implements on a more extended scale. Formerly the rates depended upon a number of things which naturally would affect them, but which, in so doing, interfered with trade. The obstacle has doubtless been a serious one, especially when it came to a matter of competition with an implement maker in another country where freight rates were known and fixed and could be counted on in making a price to a customer. This obstacle, serious as it has been, will be eliminated gradually by the incoming of ships sailing between American and foreign ports at stated times, as is now the case with a few lines between New York and Liverpool. Regularity of rates are most desirable. They are coming. It will soon be possible for a dealer in central Europe to order an implement from America and to inform his customer when it will be delivered and to know himself what profit he has in it.

National habits are difficult to eradicate. Some continental dealers who have English connections, but who admire American genius in the construction of implements, are disappointed in finding that American devices and improvements are not adopted by America's competitors in the implement field. There are many reasons why they do not, and why they cannot. As stated above, national habits are hard to eradicate. Ideas ground into the mental make-up of a man cannot be gotten rid of by simply showing him that there is a better way. Those who want American implements will come to America for them. Those who want something better this year than they had last cannot afford to lose sight of what is going on in the United States. The history of the development of the implement industry demonstrates this. Instances of sticking to old methods and cumbrous devices occur to all who are familiar with the methods of countries outside of the United States.

European markets have, within a comparatively recent date, become active centers in the providing for the increasing requirements of the people. Merchants and manufacturers abroad are asking how long will this last. The political economy which has become a part of American growth answers for all time. The great industrial activity of Germany and the increasing industry in Italy, France and Spain, should and can increase steadily, year by year. With occasional breakdowns this has been the case in the United States. The demands now being supplied in Europe are practically without limit. There is a saying in the United States that production can increase until every man, woman and child have their full meals of good, substantial food, a good and comfortable home, and an abundant supply of good clothing, with something left over. This is the American standard of requirements. It is the instinctive requirement of every civilized human being. It is an ideal toward which our education and our progress are tending and is a result or a condition which can be reached. That ideal is no more than right. It is a condition to which every industrious human being has a right to aspire. It is an ideal which serves as an impulse to do more and better, to rise out of the environments about us toward more desirable ones.

THE CHINESE OF THE FUTURE.

Those exporters of agricultural implements who have looked into the possibilities of trade in China and Northern and Central Asia do not expect much profitable business until some radical, and perhaps improbable, changes are made in the habits of the Chinese. It is well to look at a question of this sort from all sides. The California fruit growers and canners of fruits and fish do not entertain any such gloomy views of Chinese trade. The recent disturbances checked, but for a time only, a growing trade which extended even into the interior of Asia. There is a movement in sleepy old China which probably will assume extraordinary proportions, viz.: An exodus of a part of its vast population to Central Asia. A rivulet of emigration has started toward Africa, and those who are on the ground believe it is the start of a great outflow from the greatest overcrowded empire on the earth. The Chinese stayed at home only because there was no place for them to go. The Europeans did the same. When opportunities in America came the outflow followed. Chinese would pour in our country if permitted. They are looking outward. The news of other lands of greater opportunities is stirring those people. The South African mine owners expect to use Chinese labor, and South African land owners are inviting them. The Chinese promise to become a mighty factor in the world's onward movement. They will overspread contiguous lands and will welcome progressive methods to subdue those lands to their uses. Let the business world keep its eyes on China and the Chinese. This page of the world's development has just been turned.

MISCELLANEOUS.

Germany and Austria report good crops of potatoes. The crop in the United States is fully up to the average.

The world's supply of hops will be short this year. The area of land in Europe and America devoted to hops has been restricted.

Denmark is proving a paying market for American makes of hardware, small tools, harvesters, mowers, and reapers. All recent shipments were large.

America grows a large crop of peanuts annually. Last year the crop was unusually large and from the present outlook the year of 1900 will nearly equal 1899.

During the past year foreign business in American implements has made wonderful progress. For a given amount of effort the foreign agent is reaping a more substantial result.

All countries should unite in suppressing bogus butter and adulterated foods. Such an international undertaking would do more to advance trade between nations than anything else.

Advices from Copenhagen, Denmark, inform us that Danish merchants are each season increasing their orders for American equipment and machinery. The Danes are improving their trade relations with the United States.

The steamer Kaffir Prince sailed October 13th from New York for Buenos Ayres with $65,000 worth of agricultural implements and other goods. This season's shipments of agricultural implements to Brazil and Argentina are particularly large.

One of the largest chimneys in America is that just erected at the factory of the Deering Harvesting Company, Chicago, Ill., U. S. A. It is 268 feet high, 40 feet square at the base, and 76 feet in circumference at the top. With it have been installed three 2,500-horse-power engines.

Bavaria contains people who are enterprising, and the Government is progressive. The Government, which owns the railroads, is preparing to equip its lines with American-made cars. Its farmers are favorable to American implements and await the opportunity to secure more of them.

Mr. H. W. Doughten, Moorestown, New Jersey, U. S. A., manufacturer of potato diggers, has issued a combined calendar and thermometer which is one of the neatest and most convenient combinations out for a desk or office. Dealers who will write him can secure both a thermometer and calendar for 1901.

In France the tires of wagons are from three to ten inches; Switzerland requires all draught wagon wheels to have six-inch tires, and not less than four inches must be used in Germany. No road that can be constructed will resist the cutting by heavy wagons with narrow tires, and until wide tires are the rule in all countries, good roads will not be general. Wide tires roll the roads and make them better.

There is one field abroad to which foreign dealers in agricultural implements will do well to give closer attention, viz., Southern Europe. Dealers are much encouraged with what they have done with American agricultural implements in that section, and they have demonstrated that it is merely a matter of energy and enterprise to build up a profitable and a permanent business in American implements in all that populous region.

The steamers Saxon Prince and Herminin left New York during the second week of October with over $200,000 worth of agricultural implements and agricultural machinery aboard. This is indicative of thriving conditions. If the farmer can buy implements there is a future for the country. For two ships to take that quantity of implements is a significant thing. Enterprise on the part of dealers there appears to be well rewarded.

Readers of the "Export Implement Age" have much responsibility just at this time in view of the many opportunities that are being presented for obtaining implements and farm machinery on favorable terms. American makers are always willing to make known their prices and the value of their productions. The quotations on some lines have been reduced and every dealer abroad should at once take steps to inform himself on these matters.

Brazilians who would like to deal with Americans are discouraged, our consuls there tell us, because of the absence of banking facilities. Our implements are appreciated and their further use is desired, but the convenience of English and German credit leads them to deal elsewhere. There is only one present way out and that is to open communication with our exporters at New York, who will find means to make exchanges without causing inconvenience to Brazilians.

Straws, it is said, indicate the direction of the wind. Inquiries have been received for steel rails within the past few days from South Africa, Australia, South America and Mexico. The construction of railroads points to a good deal past, present and prospective. Where railroads are there is agriculture, and where agriculture is there is a market for implements. The building of railroads in these countries will soon develop a demand for agricultural implements which exporters and dealers abroad cannot cultivate too assiduously.

Our prospective patrons in Greece are reminded that opportunities for importing agricultural implements and machinery direct from the United States are increasing by the growing fruit trade between Greece and this country. Particular reference is made to the currant trade, of which an average of 15,000 tons are shipped annually in small lots. These returning ships can be utilized to carry implements from the United States. If those who are in a position to cultivate the implement trade of Greece, and America will look up this matter, and they will doubtless find a means for more friendly commercial relations between the two countries.

Those who are prosecuting the introduction of agricultural implements into Germany deserve credit for the energetic manner in which they are pursuing their work. German agriculturists view with favor our products and are willing, other things being equal, to extend their favors. There is no reason why this energy should not be attended with still more satisfactory results. The difficulty in years past has been to induce European agriculturists to make a trial. They have been doing so for several years, but not in the sense of experimenting. We refer our dealers in all other countries to German dealers. What they have done dealers in other countries can do.

Dealers in those countries in which potatoes are grown are reminded that they can greatly increase their product and lessen their labor by the use of American potato cultivating implements, which are frequently illustrated in this journal and particularly referred to. Dealers might find it to their advantage to put a few hundred implements suitable for the more profitable cultivation of potatoes into use where the crop is an important one. The requirements of the soil may possibly require some special adaptation of implements. If so, it would be well for dealers to ascertain whether the American potato-diggers and other equipment for potato cultivation do not possess superior advantages.

AMERICAN TRANSPORTATION FACILITIES.

The greatness of America is to a very large degree due to her railroads. Her vast agricultural regions are crossed and recrossed with them. A large map of her railroad systems look like a cobweb. On December 31st, 1899, there were over 190,000 miles of railroad track, of which about 4,000 miles were completed last year.

Reports cover only about 185,000 miles. It may be interesting to know the cost of this system. It is put at $12,426,,650,000, oi which nearly half is capital stock, and as much more funded debt.

The cost of the total mileage and requirement is $10,256,000,000.

The number of passengers carried for the year was 538,000,000, who rode 14,860,000,000 miles. This averaged 200 miles for each head of population in the United States, a fact which throws much light on the American character. Some one says the Americans go home when there is no place else to go to.

The volume of freight moved amounted to 976,000,000 tons, which amounts to over 13 tons of freight per head of population.

The total passenger and freight earnings foot up $1,336,000,000. The cost of operating was $888,000,000. The profits were $448,000,000, which other sources of revenue run it up to $514,000,000.

Out of this profit have to be paid interest on bonds, dividends, rentals and dividends on rentals amounting to $411,000,000, leaving an undivided surplus of $103,000,000. The total dividends appear to be $109,000,000, on a capital stock investment of $5,882,000,000.

The general impression prevails that American railroads are exceptionally profitable. This is not the case; upwards of half the mileage pays no dividends.

The masses of the people, especially the agricultural interests, profit by the facilities afforded to reach markets. But for this vast railway system the agricultural interests of the United States would not be what they are.

During last year 21,080 patents were applied for in Germany, compared with 20,080 in 1898, and 18,347 in 1897. Of these, 7,430 were awarded after examination by the Patent Office, the corresponding number during last year having been 5,570. Thus, while the number of applications only increased by 3.7 per cent., the number of successful applications increased by 33.4 per cent. During the year 5,171 patents have expired or become void, and the total number of patents in force is 22,198.

Americans in Europe do not understand why a heavy implement, which requires four horses, should be used, when a lighter implement, costing less and fully as strong, will do the same work with only one or two horses.

The possibilities of obtaining a still stronger steel for use in agricultural implements are looming up. Metallurgists are not satisfied that the best has been done in steelmaking, and some day we may have still lighter implements and equipments.

Twine Exhibit, Paris Exposition. Bramante exhibido, Paris Exposition.
Ficelle exposée, Paris Exposition. Ausgestellter Bindfaden, Paris Exposition.
Deering Harvester Co., Chicago, Illinois, U.S.A.

The best farmers are those who use implements that save labor. Human labor is expensive, and adds to the cost of production. A farmer by himself, and who has an appropriate implement, can grow his crops cheaper and easier than the farmer who depends upon his entire family, without the aid of labor-saving implements.

The foreign dealer sells agricultural implements and machinery in order to make a profit. He sells to anyone who wishes to buy, and he should buy from anyone who has the implements to sell, provided they are suitable. He should have no favorites and no prejudices, but should seek the best to be obtained.

A recent imperial decree fixes certain weights and measures in Russia. The standard of weight is the pound, which is equal to 409,512 grams. The pood (40 pounds) is therefore 16.38 kgs. The unit of liquid measure is the verdo, which is to hold 30 pounds of distilled water at 16.6° C. The unit of length is the archine, which is equal to 71.12 centimeters. This decree does not change the established standards, but simply establishes their value in relation to the metric measures. The use of the metric system is hereafter optional in all dealings in Russia.

One thing which is bound to help the export trade of this country in agricultural implements is that the United States is gradually capturing the iron, steel, machinery and tool trade of foreign countries. As long as the whole world had to go to England for these products she had an advantage over us. The world sold to her and it was but natural that the world should buy from her, even though the farmers heard rumors of the superiority of American goods. But now the foundations of trade are changing. American steel, American hardware, and American machinery, equipment and tools are going out, and every month and year increases the market through those channels for American implements.

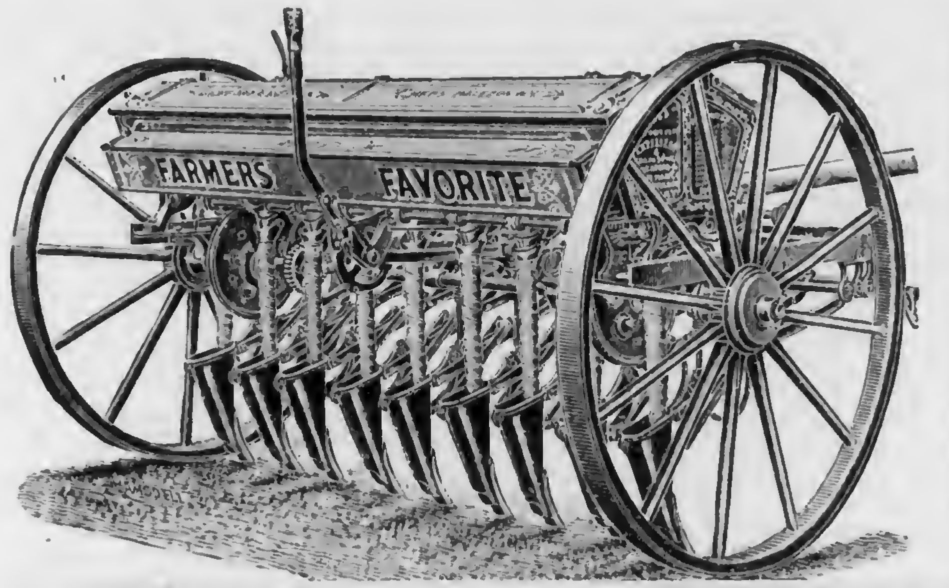
With the advantages at the moment enjoyed by manufacturers in the United States of being able to secure raw material at less cost than their European competitors, the expansion of foreign trade is expected to continue in even greater proportion than it has in the past few months. For more than two months merchants shipping to certain markets have been regularly sending cable quotations of the state of the market to America, and to France, and even as far as Argentina and Australia it has paid for the effort. What is better, new results leading to actual business which otherwise takes two or three weeks to effect, are in evidence almost daily.

The United States has become one of the leading nations of the world. A hundred years ago the population was only 5,000,000. Now it is 75,000,000. It is claimed to be the wealthiest country on earth. The greatness of the United States is due to agriculture, but agricultural implements have enabled America to grow large crops and supply the world with breadstuffs.

The exporters and importers of machinery and the dealers in machinery the world over are not true to their customers or to themselves unless they keep them fully posted on what is going on in the United States in the implement line.

Foreign dealers should not overlook the important fact that American implement makers are constructing their implements steadily better, frequently lighter, and generally more enduring, as year by year they add to their fund of practical experience.

The trade of the United States with Australia is increasing every year. America purchases wool in immense quantities from Australia, and South America sells in return machinery and implements.



A REPUTATION OF 50 YEARS

A COMMON SENSE PROPOSITION

We have been engaged in the manufacture of Grain Drills for fifty years. We make nothing else. Our machine is made by skilled mechanics of Grain Drill experience

The FARMERS' FAVORITE Grain and Fertilizer Steel Frame Drill

is the **BEST IN THE MARKET.** Compare it for substantial and careful construction with any other.

All steel. The only drill with indestructible Spiral Steel Grain Tubes. Axles and Shafts of fine cold drawn steel. Lightest draft. Most accurate distributer of Grain and Fertilizer.

WE COPY NO ONE

But we have many imitators. The Wizard Force Feed Fertilizer; the original Double Distributer; the quick change, accurate and simple speed device—all original "FAVORITES."

Agents and Farmers always pleased.

BICKFORD & HUFFMAN CO., Macedon, N.Y., U.S.A.

WRITE FOR CATALOGUE

"TIME IS THE TEST OF MERIT"

Engines AND Boilers

In a variety of sizes and styles from 3 to 50 Horsepower. Specially well adapted for export trade. Good agents wanted. Catalogue with prices and full information on application.

JAMES LEFFEL & CO.,
Num. 54, Springfield,
Ohio, U. S. A.

Dampfmaschinen und Dampfkessel

Verschiedener Grössen und Systeme, von 3 bis 50 Pferdekräften; beste Bezugsquelle für Exporteure; tüchtige Vertreter gesucht. Kataloge mit Preisangaben und ausführlicher Beschreibung auf Wunsch kostenfrei.

JAMES LEFFEL & CO.,
Num. 54, Springfield,
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Máquinas de vapor y Calderas

de todos tamaños y formas desde 3 hasta 50 caballos de fuerza, especialmente adaptadas para la Exportación. Se desean buenos Agentes. Catálogos con precios é informes completos, son enviados á los que los soliciten.

JAMES LEFFEL & CO.,
Num. 54, Springfield,
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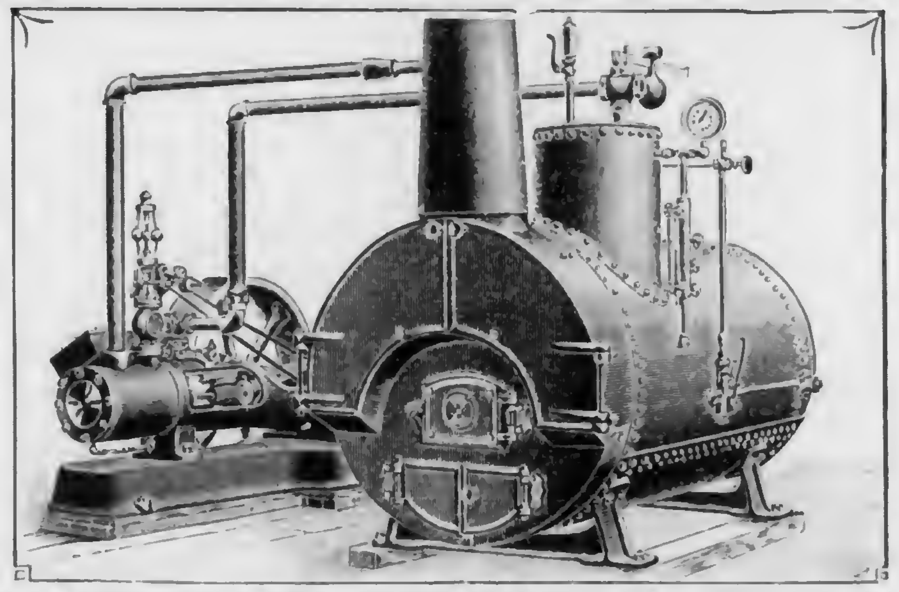
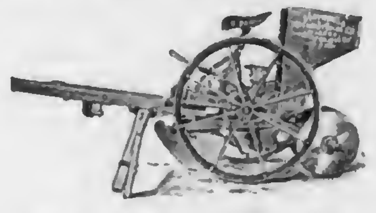
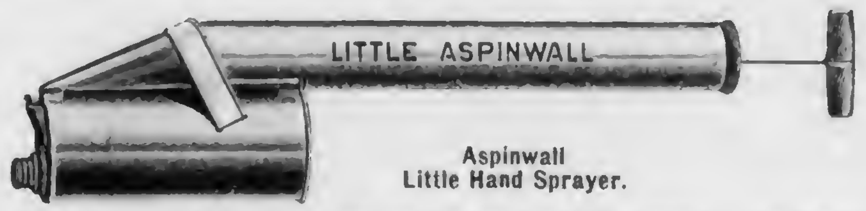


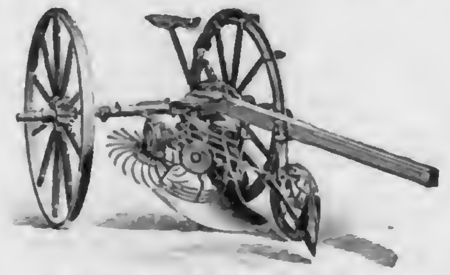
ASPINWALL POTATO MACHINERY



Aspinwall Potato Planter.



Aspinwall
Little Hand Sprayer.



Aspinwall Potato Digger.

Aspinwall 4-Row Sprayer.

Aspinwall Sorter.

Reputation established. Over twenty years on the market. Used and endorsed by thousands the world over. We also make Barrel Churns, Lawn Swings, Post Hole Diggers and Weeders. Write for catalogues and prices.

MAQUINARIA "ASPINWALL" PARA PATATAS (PAPAS).

Bien sentada Reputación en el espacio de Veinte Años en el Mercado. Usadas y Recommendadas por millares de parroquianos en todo el mundo. Fabricamos también Mantequilleras de Barril—Columpios de Linón—Abridoras de Agujeros y Escardillas. Escribase pidiendo Catálogos y piecios.

APPAREILS ASPINWALL POUR TRAITEMENT DES POMMES DE TERRE.

Réputation établie dans le Commerce depuis plus de vingt ans. En usage et en faveur chez des milliers de clients dans le Monde entier. Nous fabriquons également des Barattes à beurre—Balançoires de Pelouse—Appareils pour planter les Poteaux, et Sarcloirs à mauvaises herbes. Demander par lettre les Catalogues et Prix Courants.

"ASPINWALL" KARTOFFELE-GRATE.

Stehen seit über zwanzig Jahren im Handel in bestem Rufe. Sie werden in der ganzen Welt von Tausenden benutzt und empfohlen. Wir fabriziren auch Butterfässer, Schaukeln, Pfostensetzer und Jäter. Kataloge und Preisliste gratis und franco.

DEPT. B.
ASPINWALL MANUFACTURING CO., Jackson, Mich., U.S.A.

Subscribe for the EXPORT IMPLEMENT AGE $1.00 per Year.

THE AMERICAN EXPORT TRADE.

Largest Excess of Merchandise Exports Ever Recorded.

The largest excess of exports of merchandise ever recorded in America's commercial history is shown by the official figures of the Bureau of Statistics for October last. The excess of merchandise exports for the month was $92,475,226, or at the rate of more than a thousand millions of dollars per year. The magnitude of this balance is partly indicated by the fact that the whole volume of exports as recently as the fiscal year 1897 was less than this rate of excess over imports, and that the whole volume of exports as recently as 1888 was only $695,954,507. The total merchandise exports of October were $163,093,597.

This movement of exports is the largest ever recorded in any month of American commercial history and is larger by nearly 50 per cent. than the export movement of September, which was $115,629,417. The exports of October two years ago were only $118,619,563, and one year ago $125,966,527. It is necessary to go back less than two years to find a volume of exports but little more than half the amount for October. This was in April 1899, when the amount was $88,794,873. It is necessary to go back only to July, 1898, to find exports of $72,525,049 or much less than half the volume of last month. The imports of the month were $70,618,371, as compared with $72,232,238 in October of last year and $53,349,526 for 1898.

The figures for the ten months ending with October show an excess of exports of $499,667,936. This is larger than any previous record, but not much above the same ten months of 1898, when the balance was $460,169,226. The balance of the first ten months of 1899 was $370,309,391. The total exports for the ten months, however, have been $1,194,775,205, which is $166,331,178 larger than last year. The imports for the same period have been $695,107,269, an increase of $36,972,633 over last year.

Twine Exhibit, Paris Exposition.
Ficelle exposée, Paris Exposition.
Bramante exhibido, Paris Exposition.
Ausgestellter Bindfaden, Paris Exposition.
McCormick Harvesting Machine Co., Chicago, Illinois, U. S. A.

INDIA'S REQUIREMENTS.

Exporters of agricultural implements to India from Europe do not need to be reminded again that the agricultural condition of India calls for much equipment of American manufacture. The impoverished remnants of the agricultural population are gradually returning to their devastated farms all over India. They have had a long struggle with famine, and are facing another with poverty. But the kindly soil and climate of India will promptly respond, by the aid of welcome rainfalls, to the efforts of the impoverished people. Their implements are badly rusted, useless or destroyed, and they need more. The people of India will some day be on a more promising foundation.

RAILROADS AND EXPORTS.

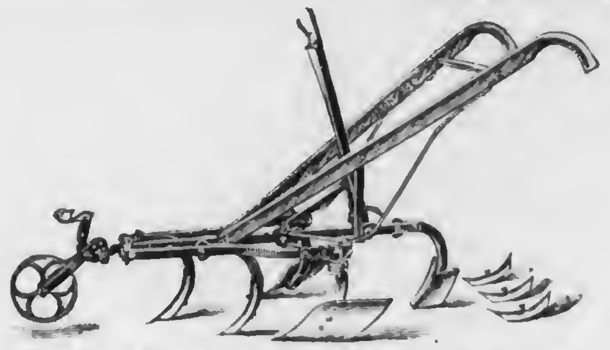
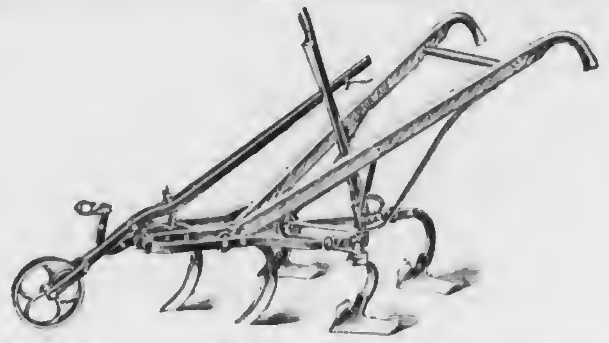
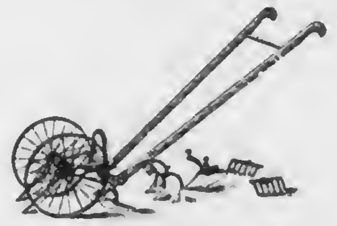
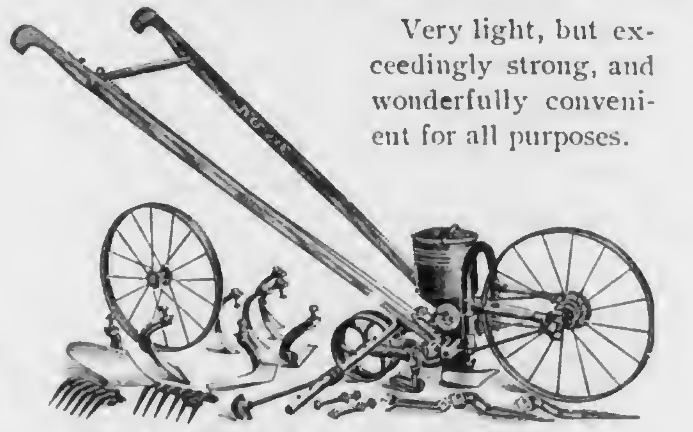
The trade missionaries who are carrying the banner of civilization into foreign lands, especially those who are operating from such bases of supplies as London, Hamburg, Berlin and St. Petersburg, will ere long experience the stimulating influences of the world-wide railroad building now in progress. This era of railroad construction is an era-making one. It means an early and a radical departure from all previous lines and methods of progress. Railroads are revolutionizing agencies. They are penetrating every land, bringing immeasurable resources within the limits of civilization and awakening dormant energies and stimulating enterprise, especially through agriculture. The great United States were but little more than a great colony until the transcontinental railroads were built. Railroads are opening up Africa, Asia and Australia. They are making it possible to develop a higher order of civilization, through industry, that will pin men down to define pursuits and develop wants in them that will lead to commerce. Railroads have transformed conditions in Europe, have developed commerce, have aroused enterprise and have fired ambition. They open up to the traders of the world the grandest opportunities ever offered.

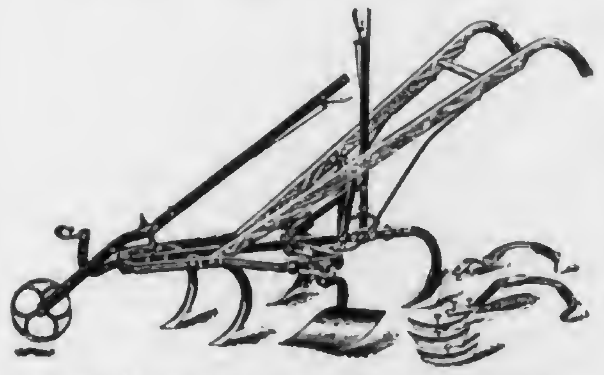
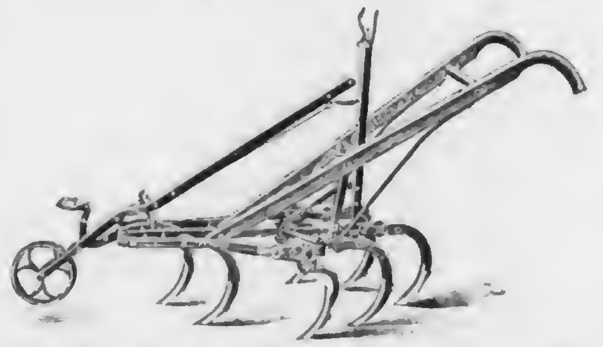
TRADING IN THE BEST MARKETS

One of our German correspondents makes mention of the importation of some small agricultural implements from the United States to Berlin via Hamburg for export. Dealers in implements in Europe are gradually looking at trade from the standpoint of dollars and marks. The German traveling agent is paid to be enthusiastic in pushing the products of his own house. The European dealer stands on a higher level and is necessarily cosmopolitan. He buys where he can buy best. If he finds customers whom he can better serve by furnishing them American implements, to America he sends. This accounts for some recent round-about shipments. The hint might well be taken by agircultural implement dealers all over Europe and throughout the world, viz., to keep a close watch on what is being done in the United States by the implement manufacturer, what means are being provided for more direct shipment, what advantages are being offered as to price, what greater economy in work, if any, is to be had, etc. There is no doubt that the reshipment branch of the business of European implement dealers can be greatly increased, and that the orders of European dealers to the United States can be filled at least as profitably as if placed in Germany or England. Sentiment no longer rules. Nationality has no significance in trade. Commerce is a leveler. The best result for the least money is the keynote of modern activity. The new world beyond the Atlantic has much to hold out to European buyers in the way of economy in price, economy in weight, economy in effort and in cost to maintain. The American mechanic will bear watching. He never stops; he is always thinking, planning, seeking for some shorter way to reach the same result. The American implement maker has reconstructed every implement he sells scores of times. He is still reconstructing. This is the genius of Americanism. It signifies nothing that he has a good implement. Even if it is something better than was ever before thought out and made, he completes his best thought and begins to pull it to pieces to make a better.

MERIT AND QUALITY.

The users of American agricultural implements abroad are realizing more and more the lasting merits of American implements. They see the installation of American machinery for all purposes where steam and electricity are the motive powers. They witness the establishment of American plants to manufacture machinery on American plans with American mechanics where native mechanics cannot be found with special skill. All these transformations, these calls on Americans for machines, simply mean that American appliances and devices are meritorius, that they do their work well and economically, and that it pays to use them.

THE "IRON AGE"
Farm and Garden
Implements.
A TYPICAL LINE OF THE MODERN TOOLS
USED BY THE AMERICAN FARMER.

The No. 6 "Iron Age" Horse Hoe and Cultivator, with Plain Wheel.

The No. 6 "Iron Age" Horse Hoe and Cultivator Equipped for Level Cultivation.

Very light, but exceedingly strong, and wonderfully convenient for all purposes.

The No. 1 "Iron Age" Double Wheel Hoe.

The No. 6 "Iron Age" Combined Wheel Hoe, Hill and Drill Seeder.

The No. 4 "Iron Age" Combined Seed Drill and Wheel Hoe.

The No. 6 "Iron Age" Horse Hoe and Cultivator, Complete.

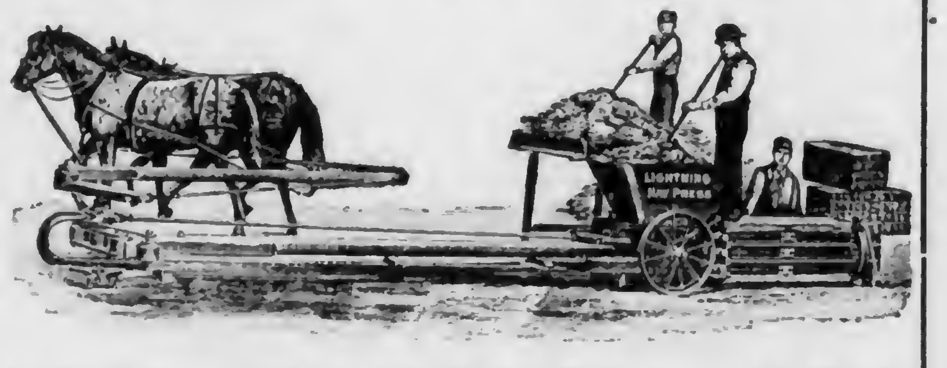
The No. 6 "Iron Age" Horse Hoe as a Cultivator, shown with "Furrow-Closing" Attachment.

BATEMAN MFG. CO.,
Box X. GRENLOCH, N. J., U. S. A.
EUROPEAN AGENCIES: GEO. W. SILLCOX, Brussels.
LANKESTER & CO., London.
AUSTRALASIAN: ARTHUR YATES & CO., Sydney.
Works Established 1836. Correspondence Solicited.

SALEM IRON WORKS,
SALEM, N. C., U. S. A.
Manufacturers of
Steam Engines, Saw Mills, Wood Planers, Railroad Cross-Tie Machines, Coffee Hullers, Pulpers, Washers, Dryers, Polishers, Centrifugals, etc. Complete equipments furnished for Saw Mills and Woodworking Establishments or plants for handling the Coffee Crop. Estimates furnished on application. Parties interested should state explicitly what they want. Full Descriptive Circulars or Catalogues mailed on application.

The above cut shows the U. S. Coffee Huller, Manufactured by the Salem Iron Works, Salem, N. C., U. S. A.

MAUD S.
WIND MILL AND PUMP CO.
Lansing, Mich., U. S. A.
Manufacturers of the Original
Maud S. Pumps,
Pumping and Power Windmills,
ESPECIALLY FOR EXPORT.
Write for our latest Illustrated Catalogue.
EXPORT OFFICE
2-4 Stone St., New York.
P. AUBECK, Manager.



LIGHTNING HAY PRESSES.
All Styles. Steam and Horse Power. All Metal.
MOST POWERFUL AND DURABLE.
Greatest Capacity.
10 to 40 Tons per Day.
KANSAS CITY HAY PRESS CO.
Kansas City, Mo., U. S. A.
409 MILL STREET.

P. AUBECK, 2-4 Stone St., New York, U. S. A.
Cable Address, "ALAMPE."
Manufacturers' Export Representative.
N. B.—Correspondence in any language promptly attended to.
Dirección por Cable, "ALAMPE."
Representante de Fabricantes para la Exportación.
N. B.—Se atenderá con Despacho á la Correspondencia en cualquier Idioma.

How are YOU Building?
Build you MUST.
Good or Bad.
Fortune or Failure.

THE
OSBORNE LINE
FURNISHES
Good Material Thoroughly
Tried for Nearly 50 Years

Plenty of Material Fitted
to all Seasons
Spring, Summer & Fall

The Plan Provides for Saving Money for the Dealer in many ways

ADDRESS,

D. M. OSBORNE & CO.

London, E. C., England. Paris, France.
Odessa, Russia. Melbourne, Victoria.

Agencies in all Principal Cities of **Europe, Australasia, South America, South Africa and Mexico.**

TIGHT BINDING TEXT CUT OFF

SPAIN RAPIDLY GAINING.

Table Showing a Wonderful Increase of Imports Into Spain of Iron Manufactures.

Spain's increase in imports of iron manufactures since 1898 has been remarkable. These imports, compiled for "The Export Implement Age" by Mr. Antonio Cuyas, of Madrid, indicate that extensive internal improvements are being made, and that Spain is about to take a leading position in the march of progress. This is gratifying to the Americans as well as to the people of Spain, and it is hoped that in 1901 she will show even a much better record.

During 8 months ending August 31

	1898 Pesetas	1899 Pesetas	1900 Pesetas
Tubes	355,000	623,000	930,000
Wire	213,000	397,000	810,000
Cables, barbed wire and springs	324,000	405,000	542,000
Large castings	391,000	530,000	1,133,000
Small "	1,125,000	1,770,000	2,585,000
Car wheels and tires		1,263,000	3,729,000
Agricultural implements	118,000	255,000	375,000
Steam engines and boilers	3,252,000	3,652,000	6,421,000
Sewing machines.	843,000	1,547,000	1,889,000
Bicycles			273,000
Other machinery	12,285,000	19,149,000	28,535,000

The following shows the growth of street railways owing to the adoption of electric traction, although several important works are turning out many cars for which the trucks and other parts are imported: Street cars, 1898, were 2,224 pesetas; for 1899 the amount was 59,047 pesetas, and for 1900, 750,886 pesetas.

A peseta is equal to about 19 1-3 cents American money, and also about equal to one franc.

CLOSER TRADE RELATIONS.

"The Export Implement Age" feels that it has a greater problem before it than simply to announce to its readers throughout the world—English-speaking as well as non-English-speaking readers—what its American patrons have to offer for sale. To advertise our patrons' products is only one purpose of this journal. Its further purpose is to draw the implement dealers throughout the world into a closer and better understanding of the United States, of its people, of their methods, spirit, purposes, and the genius of American institutions. It is the object to open up the United States to the eyes of the world, especially as to its agricultural methods and its agricultural machinery, its farm equipment, and its ideas as to how to get the best results through the use of machinery out of their labor on the soil. This journal takes a broad view of all matters, and it will aim to enable its friends in Europe, Asia, Africa, Australasia, and throughout the lands of our own hemisphere to become familiar with all things in its field which will be of interest and advantage to them.

The dealer who can influence a farmer to use something better in cultivating the soil increases the yield of the farmer's crop, puts more money in circulation, and will sell more agricultural implements and machinery.

American manufacturers of agricultural implements and machinery won a large share of the prizes at the Paris Exposition.

IMPLEMENTS THAT SELL.

The main qualification desired in an implement is that it must perform the work demanded. The next is that it must be durable and not require repairing too frequently. It should also work rapidly and perfectly under all ordinary conditions. Paint sometimes hides defects, but when the implement is in use it soon demonstrates its real value. The merchant who sells goods should always keep in view the fact that he must satisfy the customers, and it is his duty to sell only such implements to them as will answer their purposes. There is always room for something new and better, however, but the manufacturer who goes on the market with an inferior article can only remain in the field for a short time. Merit in implements will always sell them.

Twine Exhibit, Paris Exposition.
Ficelle exposée, Paris Exposition.
Bramante exhibido, Paris Exposition.
Ausgestellter Bindfaden, Paris Exposition.
Aultman, Miller & Co., Akron, Ohio, U. S. A.

A GRAND CATALOGUE.

The Gould Manufacturing Co., Seneca Falls, N. Y., U. S. A., has issued a complete catalogue of pumps and hydraulic machinery for every service, including pump supplies, well tools, etc. It is one of the most complete books of its kind ever published, containing 344 pages, and the arrangement is something new, making it a convenient matter to refer to any particular line; in fact, it will be found a valuable reference book to all interested in any kind of pumps or well supplies, from the small hand pump to those designed for large water works. A copy will be furnished any party in the trade upon application.

TRADE BENEFITS ALL COUNTRIES.

The merchant or farmer who is of the opinion that he must not send money abroad for goods is not liberal in his views. If the European sends a certain sum of money to an American for a plow it is true that the American will have the money but the European will have the plow. It is, after all, simply an exchange. One does not give the other anything, nor is there any obligation to be considered in the transaction. When a man desires an article he gives something in exchange, whether in the form of money or of goods. If an American desired to purchase a cask of wine in France, and the owner of the wine wanted a plow, the two parties could easily exchange the plow and the wine, and if the one sells his wine and buys the plow, while the other sells his plow and buys the wine, thereby tendering to each other money, the transaction would be no better than if there is an exchange of the products. When a country sends money to another country it is not given away, but something of equal value is returned therefor.

AMERICAN HARDWARE.

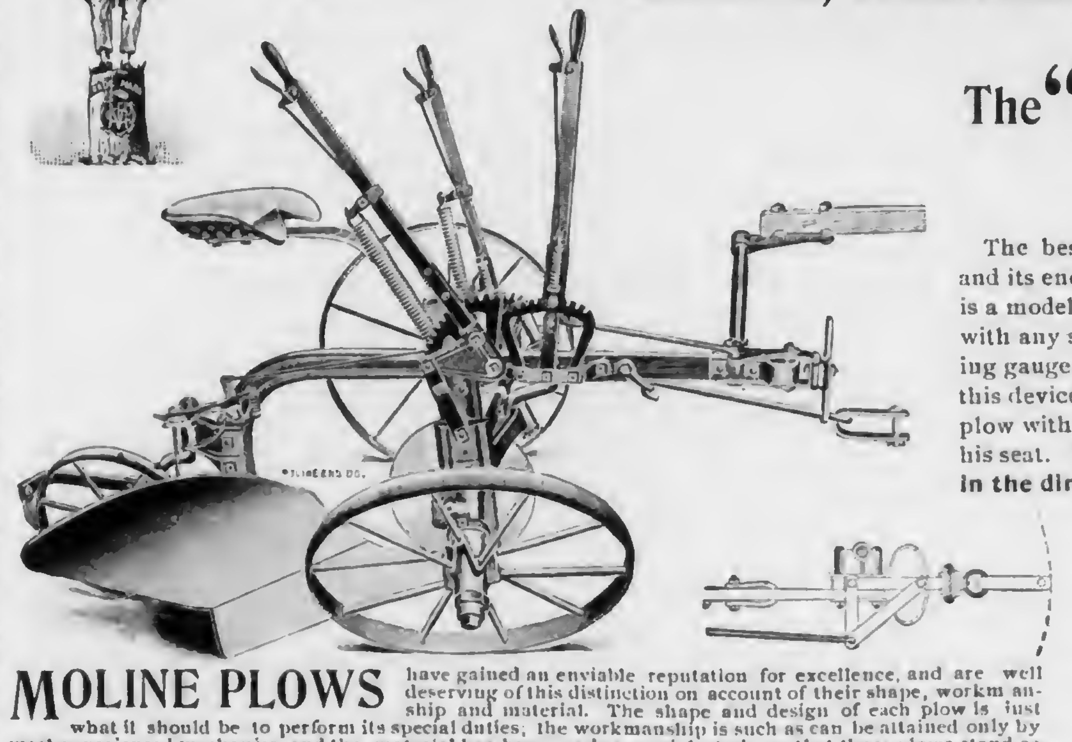
It is claimed that there is no foreign market using as much American hardware as Australia. Every steamer leaving New York for that British colony takes thousands of dollars' worth of hardware specialties, and leading import firms at Sydney and Melbourne have their representatives in the United States who buy hardware almost exclusively in large quantities. The aggregate shipments of hardware by a steamer which recently left New York for Australian ports were valued at $58,500. None but those in the trade can appreciate what a quantity of material must be shipped in order to reach such a figure. It is predicted by those in a position to know that, judging from present indications, the possibilities for the sale of manufactured iron and railroad material are very encouraging.

The American Steel and Wire Co., Chicago, Ill., U. S. A., has recently issued a magnificent catalogue of the goods made by them and desire all foreign merchants interested to write them. They manufacture wire for all purposes, designs of which we have illustrated in previous issues.

Manufacturers of the Famous "Moline Plows" and "Flying Dutchman" Farm Implements.

MOLINE PLOW CO.
MOLINE, ILLINOIS, U.S.A.

WALKING and RIDING PLOWS
PIPE LEVER HARROWS
and DISC HARROWS,
CORN DRILLS and PLANTERS,
CORN CULTIVATORS,
SUGAR PLOWS and CULTIVATORS,
BEET SEEDERS, CULTIVATORS and HARVESTERS.



The "Good Enough" Sulky Plow.
("Bastante Bueno")

The best evidence of the value of this plow lies in its great popularity and its enormous sales in the United States and many foreign countries. It is a model of simplicity in design and construction, and can be equipped with any size of plow bottom desired. It is fitted with the new style landing gauge shown in the illustration and detail cut. The great advantage of this device is that it enables the operator to regulate the "landing" of the plow with two, three or four horses in any kind of ground without leaving his seat. **This means of "landing" causes the plow to always travel in the direct line of draft, and insures lighter draft.**

Correspondence from agriculturists and dealers in any part of the world cheerfully and promptly attended to.

We issue Catalogues and Circulars in the English and Spanish languages describing our unrivaled line of Walking and Riding Plows, Harrows, Drills, Cultivators, etc.

MOLINE PLOWS have gained an enviable reputation for excellence, and are well deserving of this distinction on account of their shape, workmanship and material. The shape and design of each plow is just what it should be to perform its special duties; the workmanship is such as can be attained only by most experienced mechanics, and the material has been made a special study, so that these plows stand as models of excellence.

We take the liberty of calling your attention to the suits of the Mercantile Publishing Syndicate (Limited) against the Western Union Telegraph Co., and same against the International Cable Directory Co., and another, decided in the High Court of Justice, Queen's Bench Division (England), before Mr. Justice Ridley, as appears from The London Times of July 11th, 1899, in which suits judgment was rendered, enjoining the publication or sale, by the defendants or their agents, of the Western Union Telegraphic Code and International Cable Directory, on the ground that such publication and sale are infringements on the copyright of the plaintiff in those actions.

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CONTENTS — The Code contains 800 pages of 75,000 Ciphers; 65,000 have sentences, and 10,000 are blank, enabling the addition of private phrases under their proper headings.

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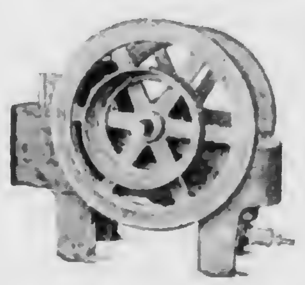
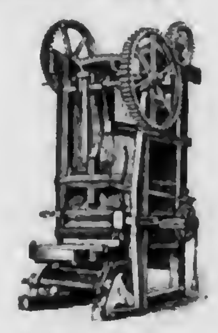
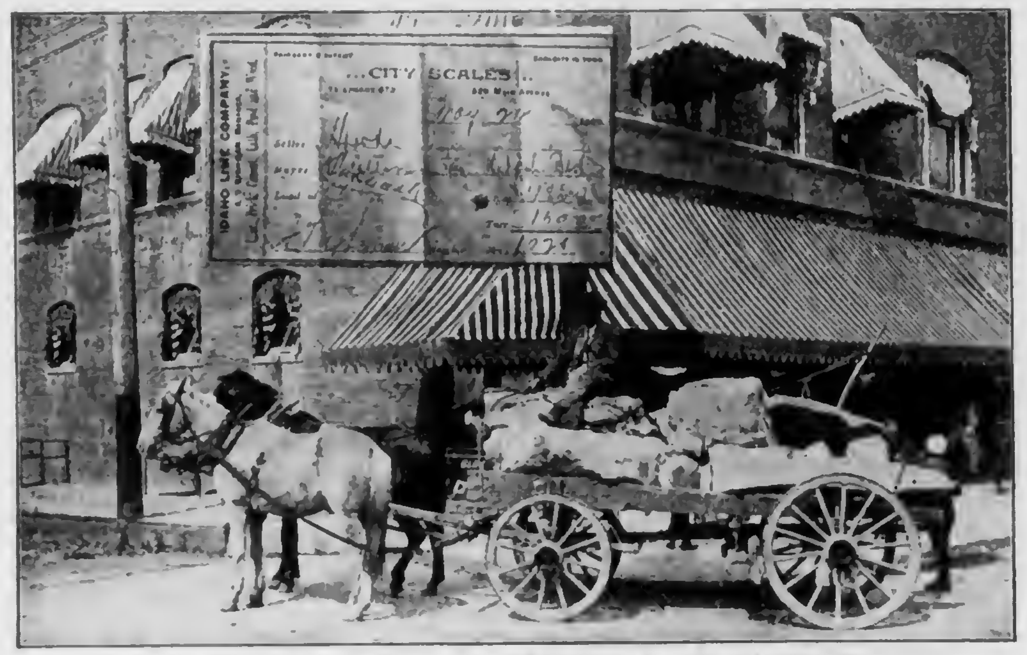




The Henry Martin Brick Machine Mfg. Co., Lancaster, Pa.
Cable Address, MARTIN-LANCASTER. Lieber's and A, B, C Codes

THE MODERN WAGON.



This load was hauled by H. W. Hawke, on a 3½" S. S. Original and Genuine Fish Bros. Truck, made at Racine, Wis., from the Idaho Lime Co.'s quarry, six miles east of Spokane, over rough roads, with a team of cayuses weighing only 1,900 lbs. Gross weight, 11,850 lbs. 1,600 lbs. tare, 10,250 lbs. net.

The United States leads all other countries in the manufacture of agricultural implements, machinery, farm tools and farm supplies. This is especially true of the manufacture of wagons. No other country in the world has made such progress and strides in the manufacture of pleasure vehicles and heavy vehicles for the transportation of machinery, farm produce and for freighting purposes.

The American manufacturers in the past thirty years have constantly been improving on the wagons made a number of years ago until to-day the vehicle that they put on the market cannot be surpassed in the excellence of material, simplicity of construction, durability and weight-carrying qualities. There was a time when the farmer used a sled of his own construction hauled by oxen for transportation of different products of his ranch from one part to another, but the progressive spirit of the Americans soon evolved the modern farm wagon.

A boiler weighing 18,000 lbs. loaded on a 3¼" Original and Genuine Fish Bros. Wagon, made at Racine, Wis., and hauled by J. H. Holcombe, Moffat, Colo., to Independence Mines, 18 miles.

The heaviest horse weighed only 1,100 lbs., and the four horses hauled the load easily until they struck the sand, where other horses were put on. It took 12 horses to haul the same load on a 4¼" wagon of another make.

Wagon was sold by the Kansas Moline Plow Co., of Kansas City, Mo., to J. H. Holcombe, Moffat, Colo.

This simply goes to prove that the Original and Genuine Fish Bros. Wagon will carry a heavier load than any other wagon on the market and runs lighter.

The wagon played a most important part in the settling of the middle western section of the United States and in opening up the gold fields in the West, and it was not many years ago that the so-called "prairie schooner," a four-wheeled wagon with an immense canvas-covered top was seen daily on the plains, moving whole families westward in the hope of securing valuable gold fields. The farm wagon was a refuge from the Indians. Often the pioneers stopping on their westward journey were confronted by a marauding band of Indians, and the plains offering no shelter, they were forced to form a circle with the wagons, turning them on the side, and placing the women and children within, they gallantly held this improvised and quickly constructed fort against the Indians.

The average farm wagon manufactured in America has a guaranteed carrying capacity of 3,500 pounds. It is interesting to note that the loads carried by some of these wagons greatly exceed this. Sometimes they carry, without strain, a load of almost 20,000 pounds. This is certainly the best test and proof a wagon company might receive showing that the wagon they manufacture is constructed of the best possible material, and showing perfect factory methods in putting the wagon together.

One of the largest and most prominent wagon factories in America is located in Racine, Wis., the Fish Bros. Wagon Company manufacturing the only "original and genuine Fish Bros. wagon." To their courtesy we are indebted for the cuts used in connection with this article. This company has been in existence and has been manufacturing wagons in Racine, Wis., for over a quarter of a century. Extensive improvements have been made in the factory each year, and to-day it stands a modern wagon factory in every detail.

During 1898, a new 500 horse-power engine was installed in their factory and two immense dynamos, so that the plant is operated entirely by a system of electrical transmission of power, doing away entirely with belting and shafting, and reducing to a minimum the loss of life and limb. The engine is connected with two large motors, and these in turn transmit the electrical current to small dynamos situated in different parts of the factory, and each wood and iron working machine is connected direct with the dynamos.

This display of photographs is only a small part of the large collection which they have, and which are all voluntary testimonials, given by responsible parties, and are certainly a flattering proof and evidence of the popularity of their wagon.

They embrace photographs taken in every section of the country from the Atlantic to the Pacific Ocean, and the variety of the loads indicates very interestingly the products of different sections of the country, and the use to which a wagon is put.

Sold by Chas. L. Wilson to E. L. Barker, of La Harpe, Kansas. Weight, 9,480 lbs. 3¼' Fish Bros. Wagon, cast skein, gear brake. Kansas Moline Plow Company, Agents, Kansas City, Mo.

It is of interest to know that a wagon of exactly the same construction is used for hauling lumber, coal, shingles, hay, wheat, corn, potatoes, logs, cotton, stone, watermelons, barrel staves, and used for transportation of heavy boilers and machinery.

The American wagons are favorably known in all foreign countries, and the wagon manufacturers are enjoying a very large and desirable foreign trade. This is very true of Mexico, and it is only fair to say that the wagons shipped into Mexico and other countries of the Fish Bros. Wagon Co., of Racine, Wis., U. S. A., have given excellent satisfaction, and through the excellent results they have given, have augmented the sales of this company greatly. A handsome catalogue, showing the different styles of wagons, the materials used in their manufacture and their powerful construction will be sent upon application to the company.

The French farmers are conservative and slow to adopt new devices, but they are cosmopolitan as well as conservative, as exports of implements to France show.

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Vienna, 1873; Philadelphia, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, and the Gold Medal of the Paris Exposition, 1900.

♣

Las Medallas más valiosas en las Exposiciones Universales de

Viena, 1873; Filadelfia, 1876; París, 1878; Victoria, 1886; Chicago, 1893, y La Medalla de Oro en la Exposición de París de 1900.

♣

Les plus Hautes Médailles de Mérite aux Expositions Universelles de

Vienne, 1873; Philadelphie, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, et la Médaille d'or à l'Exposition de Paris de 1900.

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Die höchsten Preis-Medaillen auf den Weltausstellungen von

Wien, 1873; Philadelphia, 1876; Paris, 1878; Victoria, 1886; Chicago, 1893, und die goldene Medaille auf der Pariser Weltausstellung von 1900.

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THE COMING LEADERS IN TRADE.

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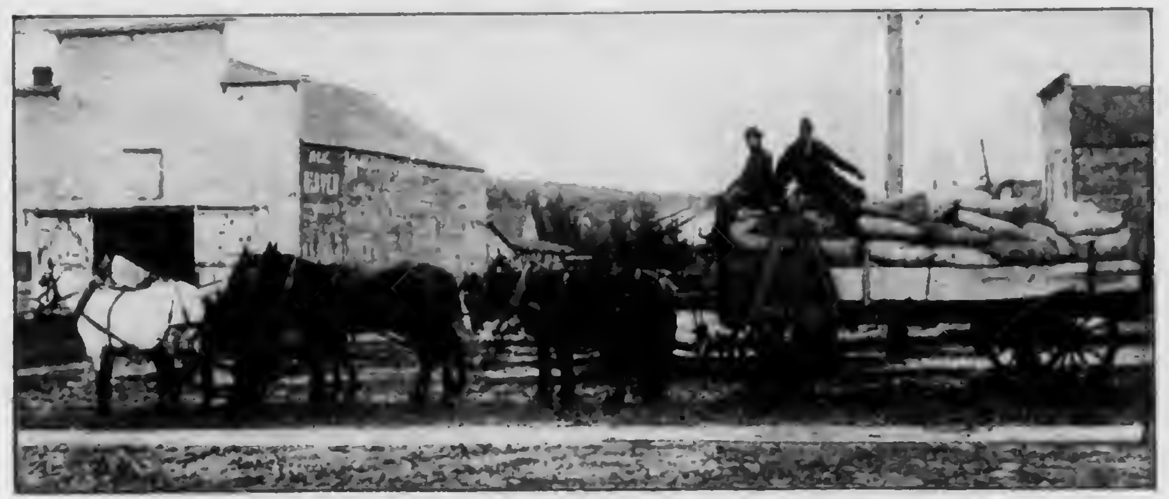

3½" Steel Skein Fish Bros. Wagon, made at Racine, Wis.
197 bushels, 20-pound wheat......... 11,840 pounds.
Rack bed.............. .... 1,061 "

Total weight on axles .... 12,901 pounds.
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The foreign dealer will find that American farm machinery will not only bring larger profits to himself but also satisfactory results to his customers, and by selling such goods it will be a matter of economy, honesty, and safety, which is the standard and foundation of permanent business.

EXPORT IMPLEMENT AGE

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Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

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Band III. Philadelphia, Pa., Ver.St.v.N-Am., Dez., 1900. No. 3

Die Statistik der Geräte-Ausfuhr zeigt, dass wenn auch die Vereinigten Staaten von Nord-Amerika zunimmt, dennoch unternehmende Agenten in Europa, Central- und Süd-Amerika, wie auch noch anderwärts zur Ausbreitung des Gerätehandels und ganz besonders des Handels in amerikanischen Fabrikaten noch ein weites Feld vor sich haben. Diese Gelegenheit wird denn auch von Vielen wahrgenommen, und ein sparsamerer wirtschaftlicher Betrieb macht sich demzufolge mehr and mehr geltend.

Einer der Hauptfaktoren, die die Geräte- und Maschinenagenturen bei Einführung von Geräten auf den Märkten des Auslandes unterstützen, ist die Konkurrenz—die Konkurrenz zwischen den Landwirten selbst. Die Macht derselben zeigt sich besonders gegenwärtig in Deutschlands Zuckerrübenkultur. Derselbe Wetteifer existirt auch auf anderen Gebieten des Ackerbaues. Es folgt hieraus, das dem Landwirte über die Notwendigkeit der Anschaffung der allerbesten Geräte für seine Spezialzwecke bald klar werden muss. Sparsame Produktion ist das nie versiegende Problem der Landwirtschaft, und wird durch vorzüglichste Geräte und Maschinen seiner Lösung am sichersten entgegengeführt.

Es existirt gegenwärtig in den Vereinigten Staaten von Nord-Amerika eine zweifache Tendenz, die alle Händler in überseeischen Ländern beachten sollten; die eine spricht sich in einem Steigen der Preise aus, das seinen Grund in höheren Arbeitslöhnen und grösserer Nachfrage im eigenen Lande hat; die andere bewegt sich dagegen in absteigender Linie und ist der zunehmenden Produktionsfähigkeit zuzuschreiben. Die Gerätehandler thäten gut daran, den Einfluss dieser beiden Strömungen auf ihre Interessen in Betracht zu ziehen. Eine der Folgen dieser Sachlage zeigt sich darin, dass renommirte Fabrikanten in ihrem eigenen Interesse gezwungen sind, bessere Geräte anzufertigen, Holz und Stahl besserer Qualitat zu verwenden und die Qualität bis in die kleinsten Details zu verbessern. Das Resultat beider Tendenzen ist eine höhere Qualität der Fabrikationsprodukte. Für einen Abschlag im Preise bleibt daher nur ein geringer Spielraum übrig. Die nächsten sechs Monate dürften aussergewöhnlich gute Kaufgelegenheiten bieten.

Der Dampfer "Helenes," der vor zwei Tagen von New York nach der Argentinischen Republik abging, hatte eine grosse Ladung landwirtschaftlicher Geräte und Maschinen an Bord. Argentinien steht in dieser Hinsicht an der Spitze; andere südamerikanische Länder importiren mehr und mehr. Die in den Vereinigten Staaten von Nord-Amerika producirten Geräte und Maschinen finden allenthalben steigende Anerkennung, da sie gebrauchstüchtig sind und allen an sie gestellten Anforderungen entsprechen.

Den Lesern des "Export Implement Age" wird gegenwärtig, wenn man die so vielfach dargebotenen Gelegenheiten zur Erstehung landwirtschaftlicher Geräte und Maschinen zu günstigen Bedingungen ins Auge fasst, geradezu eine gewisse Verantwortlichkeit auferlegt. Amerikanische Industrielle sind stets bereit, ihre Preise und die Vortrefflichkeit ihrer Fabrikationsproducte kekannt zu geben. Die Preise gewisser Spezialitäten sind herabgesetzt worden, und alle Händler im Auslande sollten sofort die nötigen Schritte thun, um sich hierüber zu unterrichten.

Einer der ersten Folgen, die die Pariser Weltausstellung auf ihre Besucher gehabt hat, war das Verlangen, etwas mehr über die Fabrikanten der ausgestellten Produkte zu erfahren. Viele von Denen, die die amerikanische landwirtschaftliche Ausstellung in Augenschein nahmen, haben diesem Verlangen Ausdruck gegeben und wünschten, Land und Leute, die solch' schlagende Beweise ihrer Geschicklichkeit herübergesandt hatten, näher kennen zu lernen. Viele Geräte wurden an europäische Landwirte verkauft und an dieselben abgeliefert. Wenn unsere Freunde in Europa nun ihren Vorteil auch ferner wahrnehmen und ihre Kenntnisse von in Amerika angefertigten Geräten und amerikanischen Arbeitsverfahren und Leistungen weiter verbreiten, so wird sich hieraus zweifelsohne ein für alle Beteiligten vorteilhafter Verkehr entwickeln.

Nationale Gebraüche lassen sich nur schwer ausrotten. Händler auf dem europäischen Kontinente, die mit England Verbindungen angeknüpft haben, aber dabei das Genie der Amerikaner im Geräte- und Maschinenbau gebührend bewundern, sind enttäuscht, wenn sie finden, dass die amerikanischen Erfindungen und Verbesserungen von den Konkurrenten Amerikas im Gerätewesen nicht adoptirt werden. Es liegen jedoch vielfache Gründe vor, weswegen dies nicht geschieht oder geschehen kann. Wie oben bemerkt, lassen sich nationale Gebräuche eben nur schwer ausrotten. Ideen, die sich einmal im menschlichen Gemüte gründlich festgesetzt haben, können nicht einfach dadurch ausgetrieben werden, dass man dem Betreffenden zeigt, wie er seinen Zweck besser erreichen könnte. Wer amerikanische Geräte benötigt, der kommt nach Amerika, um sie sich zu holen. Wer dieses Jahr höhere Ansprüche stellt als letztes Jahr, darf die sich hier abspielenden Verkommnisse nicht ausser Acht lassen. Die Geschichte der Entwicklung der Geräteindustrie beweist das. Beispiele zähen Festhaltens an alten Proceduren und plumpen Modellen drängen sich einem Jeden auf, der mit den ausserhalb der Vereinigten Staaten vorherrschenden Verfahren vertraut ist.

Den Händlern aller Länder die für ihre Kunden einkaufen, ist wohlbekannt, dass ein Kunde niemals zögert, seine Nachbarn davon in Kenntnis zu setzen, wenn er einen passenden Artikel gefunden hat; und sollte er dies auch nicht thun, so werden seine Nachbarn bald dessen gewahr, dass er ein Gerät verwendet, das von den gewöhnlich gebrauchten verschieden ist. Besitzt dieses Gerät wirkliche Verdienste, so steht es bald in allgemeiner Nachfrage; anderenfalls stellt sich dies aber auch bald heraus. Amerikanische Fabrikanten, die sich um Kunden umsehen, beabsichtigen die Anknüpfung bleibender Geschäftsverbindungen, und Händler des Auslandes, die sich mit in den Vereinigten Staaten von Nord-Amerika verfertigten Fabriksprodukten befassen, können mit Zuversicht erwarten, dass ihnen nur solche Waaren geliefert werden, die diejenigen, welche sie gebrauchen wollen, auch vollkommen zufriedenstellen werden.

Der "Star of England," ein Schiff das kürzlich von New York nach Australien abging, hatte eine Ladung amerikanischer Eisenwaaren im Werte von 58,000 Dollar—ein grosses Quantum für ein einzelnes Schiff! Die bedeutendsten Importeure von Sydney und Melbourne haben Agenten in den Vereinigten Staaten und kaufen bedeutende Quantitäten hier ein. Die Gerätehändler der ganzen Welt sollten dies wohl beachten, da sie in der Einführung amerikanischer Geräte und Maschinen weit raschere Fortschritte machen könnten, wenn sie Vertreter hätten, die ihre Bedürfnisse kennen und denselben Rechnung tragen. Hunderte von Händlern möchten gerne zehn amerikanische Geräte verkaufen, statt des einen, das sie gegenwärtig absetzen. Engere Verbindungen sind nötig, und deren Anbahnung ist leicht zu ermöglichen. Viele ausgezeichnete Gelegenheiten zur Verwertung amerikanischer Geräte und Maschinen gehen durch Mangel an genügenden Verkehrs zwischen Händlern im Auslande und den Fabrikanten der Vereinigten Staaten von Nord-Amerika verloren. Das "Export Implement Age" stellt es sich zur Aufgabe, diese Schwierigkeiten zu überwinden zu helfen.

Schwankende Frachtsätze für überseeischen Transport bilden eine jener Schwierigkeiten, die unsere Freunde im Auslande, die amerikanische Geräte und Maschinen in grösserem Maasstabe einzuführen suchen, zu bekämpfen haben. Früher hing die Fracht von einer Anzahl von Umständen ab, die ihre Höhe beeinflussten und hierdurch dem Handel hinderlich wurden. Unzweifelhaft bildeten sie ein ernstliches Hindernis, besonders wo es sich um die Konkurrenz mit einem Gerätefabrikanten eines anderen Landes handelte, dessen Frachtsätze geregelt und bekannt waren und bei Festsetzung des Preises berücksichtigt werden konnten. Dieses Hindernis, das sehr ernster Natur war, wird allmählich durch Einführung eines regelmässigen, an bestimmte Zeiträume gebundenen Verkehrs zur See zwischen amerikanischen und fremden Häfen beseitigt, wie es bei einigen zwischen New York und gewissen europäischen Häfen verkehrenden Dampferlinien bereits der Fall ist. Eine Regulirung der Frachtsätze ist äusserst wünschenswert und ist auf dem Wege der Verwirklichung. Es wird dem in Central-Europa lebenden Händler bald möglich sein, eine Maschine in Amerika zu bestellen und nicht nur seinem Kunden die Lieferzeit mitzuteilen, sondern auch seinen eigenen Nutzen im Voraus genau festzustellen.

THE COMING LEADERS IN TRADE.

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Consul Greene reports from Antofagasta, August 17th, 1900:

The Pacific Steam Navigation Company, a British firm, and the South American, a Chilean company, are contemplating an extension of their lines from Central America to San Francisco. This service, now being rendered by the Kosmos steamers, appears to be a success. The boats leave Valparaiso, call at the principal coast ports to Guayaquil, and go thence to Central American and North Pacific ports, not calling at Panama. They take and drop cargo on the trip north and generally return with full loads south. Formerly, Chilean wheat and flour had the coast trade as far at Guayaquil, but the Kosmos steamships, with their reasonable rates, now bring considerable lots, not only for coast supply, but for Bolivia, via Mollendo and this port. This last traffic has been favored by the suspension of Chilean railway service, owing to damage during the winter.

The foreign dealer will find that American farm machinery will not only bring larger profits to himself but also satisfactory results to his customers, and by selling such goods it will be a matter of economy, honesty, and safety, which is the standard and foundation of permanent business.

EXPORT IMPLEMENT AGE

NUR FÜR'S AUSLAND BESTIMMT.

Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

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Philadelphia, Pa., Vereinigte Staaten von Nord-Amerika.
W. P. NOLAN, Präsident und Director.

Von derselben Verlagsanstalt werden ferner herausgegeben: "The Implement Age" und "American Fertilizer."

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Die Statistik der Geräte-Ausfuhr zeigt, dass wenn auch die Vereinigten Staaten von Nord-Amerika zunimmt, dennoch unternehmende Agenten in Europa, Central- und Süd-Amerika, wie auch noch anderwärts zur Ausbreitung des Gerätehandels und ganz besonders des Handels in amerikanischen Fabrikaten noch ein weites Feld vor sich haben. Diese Gelegenheit wird denn auch von Vielen wahrgenommen, und ein sparsamerer wirtschaftlicher Betrieb macht sich demzufolge mehr and mehr geltend.

Einer der Hauptfaktoren, die die Geräte- und Maschinenagenturen bei Einführung von Geräten auf den Märkten des Auslandes unterstützen, ist die Konkurrenz—die Konkurrenz zwischen den Landwirten selbst. Die Macht derselben zeigt sich besonders gegenwärtig in Deutschlands Zuckerrübenkultur. Derselbe Wetteifer existirt auch auf anderen Gebieten des Ackerbaues. Es folgt hieraus, das dem Landwirte über die Notwendigkeit der Anschaffung der allerbesten Geräte für seine Spezialzwecke bald klar werden muss. Sparsame Produktion ist das nie versiegende Problem der Landwirtschaft, und wird durch vorzüglichste Geräte und Maschinen seiner Lösung am sichersten entgegengeführt.

Es existirt gegenwärtig in den Vereinigten Staaten von Nord-Amerika eine zweifache Tendenz, die alle Händler in überseeischen Ländern beachten sollten; die eine spricht sich in einem Steigen der Preise aus, das seinen Grund in höheren Arbeitslöhnen und grösserer Nachfrage im eigenen Lande hat; die andere bewegt sich dagegen in absteigender Linie und ist der zunehmenden Produktionsfähigkeit zuzuschreiben. Die Gerätehändler thäten gut daran, den Einfluss dieser beiden Strömungen auf ihre Interessen in Betracht zu ziehen. Eine der Folgen dieser Sachlage zeigt sich darin, dass renommirte Fabrikanten in ihrem eigenen Interesse gezwungen sind, bessere Geräte anzufertigen, Holz und Stahl besserer Qualitat zu verwenden und die Qualität bis in die kleinsten Details zu verbessern. Das Resultat beider Tendenzen ist eine höhere Qualität der Fabrikationsprodukte. Für einen Abschlag im Preise bleibt daher nur ein geringer Spielraum übrig. Die nächsten sechs Monate dürften aussergewöhnlich gute Kaufgelegenheiten bieten.

Der Dampfer "Helenes," der vor zwei Tagen von New York nach der Argentinischen Republik abging, hatte eine grosse Ladung landwirtschaftlicher Geräte und Maschinen an Bord. Argentinien steht in dieser Hinsicht an der Spitze; andere südamerikanische Länder importiren mehr und mehr. Die in den Vereinigten Staaten von Nord Amerika producirten Geräte und Maschinen finden allenthalben steigende Anerkennung, da sie gebrauchstüchtig sind und allen an sie gestellten Anforderungen entsprechen.

Den Lesern des "Export Implement Age" wird gegenwärtig, wenn man die so vielfach dargebotenen Gelegenheiten zur Erstehung landwirtschaftlicher Geräte und Maschinen zu günstigen Bedingungen ins Auge fasst, geradezu eine gewisse Verantwortlichkeit auferlegt. Amerikanische Industrielle sind stets bereit, ihre Preise und die Vortrefflichkeit ihrer Fabrikationsproducte kekannt zu geben. Die Preise gewisser Spezialitäten sind herabgesetzt worden, und alle Händler im Auslande sollten sofort die nötigen Schritte thun, um sich hierüber zu unterrichten.

Einer der ersten Folgen, die die Pariser Weltausstellung auf ihre Besucher gehabt hat, war das Verlangen, etwas mehr über die Fabrikanten der ausgestellten Produkte zu erfahren. Viele von Denen, die die amerikanische landwirtschaftliche Ausstellung in Augenschein nahmen, haben diesem Verlangen Ausdruck gegeben und wünschten, Land und Leute, die solch' schlagende Beweise ihrer Geschicklichkeit herübergesandt hatten, näher kennen zu lernen. Viele Geräte wurden an europäische Landwirte verkauft und an dieselben abgeliefert. Wenn unsere Freunde in Europa nun ihren Vorteil auch ferner wahrnehmen und ihre Kenntnisse von in Amerika angefertigten Geräten und amerikanischen Arbeitsverfahren und Leistungen weiter verbreiten, so wird sich hieraus zweifelsohne ein für alle Beteiligten vorteilhafter Verkehr entwickeln.

Nationale Gebraüche lassen sich nur schwer ausrotten. Händler auf dem europäischen Kontinente, die mit England Verbindungen angeknüpft haben, aber dabei das Genie der Amerikaner im Geräte- und Maschinenbau gebührend bewundern, sind enttäuscht, wenn sie finden, dass die amerikanischen Erfindungen und Verbesserungen von den Konkurrenten Amerikas im Gerätewesen nicht adoptirt werden. Es liegen jedoch vielfache Gründe vor, weswegen dies nicht geschieht oder geschehen kann. Wie oben bemerkt, lassen sich nationale Gebräuche eben nur schwer ausrotten. Ideen, die sich einmal im menschlichen Gemüte gründlich festgesetzt haben, können nicht einfach dadurch ausgetrieben werden, dass man dem Betreffenden zeigt, wie er seinen Zweck besser erreichen könnte. Wer amerikanische Geräte benötigt, der kommt nach Amerika, um sie sich zu holen. Wer dieses Jahr höhere Ansprüche stellt als letztes Jahr, darf die sich hier abspielenden Verkommnisse nicht ausser Acht lassen. Die Geschichte der Entwicklung der Geräteindustrie beweist das. Beispiele zähen Festhaltens an alten Proceduren und plumpen Modellen drängen sich einem Jeden auf, der mit den ausserhalb der Vereinigten Staaten vorherrschenden Verfahren vertraut ist.

Den Händlern aller Länder die für ihre Kunden einkaufen, ist wohlbekannt, dass ein Kunde niemals zögert, seine Nachbarn davon in Kenntnis zu setzen, wenn er einen passenden Artikel gefunden hat; und sollte er dies auch nicht thun, so werden seine Nachbarn bald dessen gewahr, dass er ein Gerät verwendet, das von den gewöhnlich gebrauchten verschieden ist. Besitzt dieses Gerät wirkliche Verdienste, so steht es bald in allgemeiner Nachfrage; anderenfalls stellt sich dies aber auch bald heraus. Amerikanische Fabrikanten, die sich um Kunden umsehen, beabsichtigen die Anknüpfung bleibender Geschäftsverbindungen, und Händler des Auslandes, die sich mit in den Vereinigten Staaten von Nord-Amerika verfertigten Fabriksprodukten befassen, können mit Zuversicht erwarten, dass ihnen nur solche Waaren geliefert werden, die diejenigen, welche sie gebrauchen wollen, auch vollkommen zufriedenstellen werden.

Der "Star of England," ein Schiff das kürzlich von New York nach Australien abging, hatte eine Ladung amerikanischer Eisenwaaren im Werte von 58,000 Dollar—ein grosses Quantum für ein einzelnes Schiff! Die bedeutendsten Importeure von Sydney und Melbourne haben Agenten in den Vereinigten Staaten und kaufen bedeutende Quantitäten hier ein. Die Gerätehändler der ganzen Welt sollten dies wohl beachten, da sie in der Einführung amerikanischer Geräte und Maschinen weit raschere Fortschritte machen könnten, wenn sie Vertreter hätten, die ihre Bedürfnisse kennen und denselben Rechnung tragen. Hunderte von Händlern möchten gerne zehn amerikanische Geräte verkaufen, statt des einen, das sie gegenwärtig absetzen. Engere Verbindungen sind nötig, und deren Anbahnung ist leicht zu ermöglichen. Viele ausgezeichnete Gelegenheiten zur Verwertung amerikanischer Geräte und Maschinen gehen durch Mangel an genügenden Verkehrs zwischen Händlern im Auslande und den Fabrikanten der Vereinigten Staaten von Nord-Amerika verloren. Das "Export Implement Age" stellt es sich zur Aufgabe, diese Schwierigkeiten zu überwinden zu helfen.

Schwankende Frachtsätze für überseeischen Transport bilden eine jener Schwierigkeiten, die unsere Freunde im Auslande, die amerikanische Geräte und Maschinen in grösserem Maasstabe einzuführen suchen, zu bekämpfen haben. Früher hing die Fracht von einer Anzahl von Umständen ab, die ihre Höhe beeinflussten und hierdurch dem Handel hinderlich wurden. Unzweifelhaft bildeten sie ein ernstliches Hindernis, besonders wo es sich um die Konkurrenz mit einem Gerätefabrikanten eines anderen Landes handelte, dessen Frachtsätze geregelt und bekannt waren und bei Festsetzung des Preises berücksichtigt werden konnten. Dieses Hindernis, das sehr ernster Natur war, wird allmählich durch Einführung eines regelmässigen, an bestimmte Zeiträume gebundenen Verkehrs zur See zwischen amerikanischen und fremden Häfen beseitigt, wie es bei einigen zwischen New York und gewissen europäischen Häfen verkehrenden Dampferlinien bereits der Fall ist. Eine Regulirung der Frachtsätze ist äusserst wünschenswert und ist auf dem Wege der Verwirklichung. Es wird dem in Central-Europa lebenden Händler bald möglich sein, eine Maschine in Amerika zu bestellen und nicht nur seinem Kunden die Lieferzeit mitzuteilen, sondern auch seinen eigenen Nutzen im Voraus genau festzustellen.

INTENTIONAL SECOND EXPOSURE

ALLERLEI.

Die europäischen Agenten, welche die amerikanischen Apfelschäler auf Lager halten, zollen denselben allgemein das höchste Lob für ihre vorzüglichen Leistungen in Bäckereien, Hôtels, oder wo sie auch sonst zur Verwendung gelangen mögen. Agenten im Auslande dürften es vorteilhaft finden, dieser wertvollen und leichtverkäuflichen Erfindung einige Aufmerksamkeit zuzuwenden.

Der Händler im Auslande führt landwirtschaftliche Geräte und Maschinen, um bei ihrem Verkauf zu verdienen. Er verkauft einem Jeden, der zu kaufen wünscht, und sollte daher von einem Jeden kaufen, der landwirtschaftliche Geräte und Maschinen feilhält, wenn dieselben seinen Zwecken entsprechen. Er sollte Niemand bevorzugen und keine Vorurteile besitzen, sondern nur das Beste kaufen, das überhaupt zu haben ist.

Der amerikanische Pflug aus gehärtetem Stahl findet vielleicht mehr Beachtung als alle anderen Ackergeräte, und seine hohe Vorzüglichkeit ist heutzutage in fast jedem Lande der Erde eine unbestrittene Thatsache. Seine Vorzüge springen in die Augen, und europäische Importeure amerikanischer landwirtschaftlicher Maschinen gehen sicher nicht fehl, wenn sie ameriknische Hartstahlpflüge führen.

Die Landwirte der Vereinigten Staaten von Nord Amerika thun sich zusammen und bauen sich ihre Butterfabriken selbst, so dass die von mehreren Tausenden von Kühen gewonnene Milch oft in einer einzigen Fabrik verarbeitet wird. Der Abrahmer ist dem amerikanischen Molkereibesitzer unentbehrlich und sollte in allen Ländern, die Molkerei betreiben, Verwendung finden.

In den Vereinigten Staaten von Nord-Amerika sind die Kaufleute, die sich mit dem Verkaufe von landwirtschaftlichen Geräten und Maschinen befassen, als "dealers"—Gerätehändler bekannt; doch wenn sie in kleineren Orten wohnen, führen sie oft auch andere Waaren. In den grossen Städten treiben sie indess ausschliesslich in landwirtschaftlichen Machinen und Geräten Handel.

In einer Kategorie von Maschinen zeichnen sich die amerikanischen Industriellen ganz besonders aus: dies sind die Weizen- und Gerstereiniger, Separatoren, Fächermühlen, Maisentkörner, Reiniger, Sortirer und Separatoren von Kaffeebohnen, Getreide- und Samenreiniger, sowie Dreschmaschinen. Wir erlauben uns, unsere Leser in Europa, Australien und Süd-Amerika darauf aufmerksam zu machen, das wir mit Vergnügen bereit sind, ihnen privatim jede gewünschte Auskunft zu erteilen, die sich in unseren Annoncen oder den zur Verfügung stehenden Katalogen etwa nicht vorfinden solte, um unsere Leser in den Stand zu setzen, beim Ankaufe die nötige Vorsicht obwalten zu lassen. Die hier einschlägigen amerikanischen Maschinen sind ganz vorzüglich gebaut und verdienen namentlich die neuesten Putzmühlen die Beachtung aller Derer, die sich die Zufriedenstellung ihrer Kunden zur Aufgabe machen.

THE STANDARD HARROW CO.

Die Standard Harrow Co., Utica, New York, Ver. Staaten von Nord-Amerika, verfertigt eine grosse Auswahl wohlbekannter landwirtschaftlicher Geräte, wie Eggen mit Holz- und Stahlgestell, Federstahleggen mit und ohne Hebel, Kegelzahneggen mit halbmondförmiger und U-förmiger Barre, Scheibeneggen, Feld-, Rasen- und Handwalzen, Cultivatoren mit und ohne Treibersitz, Jäter, Schaufelpflüge, Maisentkörner mit Holz- oder Stahlgestell, "Cumming's" Untergrund-Kartoffelausnehmer und ein grosses Sortiment von Hängeschlitten.

Die Fabrik ist seit 1893 im Betriebe und nimmt die Anlagen der vormaligen "Eureka" Mähmaschinenfabrik ein, die sie käuflich erworben hat; ihr Geschäftskreis hat sich seit der Gründung stetig ausgedehnt. Die Fabriksanlagen wurden von Zeit zu Zeit vergrössert, und werden auch gegenwärtig ausgedehnte Baulichkeiten hinzugefügt, um der wachsenden Nachfrage gerecht zu werden.

Dieser stetige geschäftliche Fortschritt ist dem Umstande zu verdanken, dass man es sich zur Aufgabe gemacht hat, die ausgezeichnete Qualität und den trefflichen Styl beizubehalten, die die aus dieser Fabrik stammenden Geräte allen anderen auf dem Weltmarkt ebenbürtig, wenn nicht überlegen machen; dieselben zeigen die jüngsten Verbesserungen, sind durch Patente geschützt und unter Zuziehung der besten Arbeitskräfte aus bestem Material gefertigt.

Diese Fabrik gehört heute, was die Anfertigung von Federstahleggen anbelangt, zu den grössten der Welt. Ihre Besitzer haben das ausschliessliche Recht zur Anfertigung und Lieferung der berühmten "Reed" Eggen mit Federstahlzähnen und hölzernem oder stählernem Gestell, der hölzernen "Perry" Eggen mit Federstahlzähnen, der "T. & H.," "Horse Shoe," "Eureka," "U. T. K.," "Deerfield," "Childs & Jones" und anderer Eggen erworben, wodurch sie in den Stand gesetzt sind, jeder Conkurrenz auf diesem Gebiete erfolgreich die Spitze zu bieten.

Die neuesten Verbesserungen, wie Kufen, Schlitten, Räder und Fahrsitze sind an diesen Eggen angebracht, und ausserdem werden zwei neue Eggen, die "Empire" und die "Excelsior," beide mit Treibersitzen, sowie auch die "Aberdeen" Schaufelrad-Egge und die "Badger" ein- und zweispännige Hebelegge angefertigt.

Um ein angemessenes Gewicht und eine befriedigende Qualität des Materials zu erzielen, werden alle aus dieser Fabrik stammenden Geräte aus nach besonderen Modellen gewalztem Stahl von zu ihrer Construktion geeigneter Qualität gefertigt.

Einen wichtigen Industriezweig der Fabrik bildet die Anfertigung von Zähnen für Federstahleggen, da richtig geformte Zähne, wie Fabrikanten und Landwirte wohl wissen, für die zufriedenstellende Arbeit einer Egge und daher für die Construktion derselben unentbehrlich sind. Mit der richtigen Form der Zähne und der Bedeutsamkeit guten Materials für dieselben, sowie auch mit den verschiedenen Modellen von Eggen durch langjährige Erfahrung aufs Beste vertraut, besitzen die Fabrikanten heute einen bedeutenden Kundenkreis für diese Specialität.

Katalog und genauere Auskunft stehen Wiederverkäufern auf Verlangen bereitwilligst zur Verfügung.

THE DAVID BRADLEY MANUFACTURING COMPANY.

Eine der ältesten Fabriksanlagen zur zeugung landwirtschaftlicher Geräte und schinen ist Firma The David Bradley M ufacturing Company in Bradley, Illin Vereinigte Staaten von Nord-Amerik. Chicagos Jugendtagen wurde die Fabrik mals an einem Orte begründet, der gegenwa dicht mit Geschäftshäusern gefüllt ist. einigen Jahren, als die Vergrösserung Fabriksanlage gebietend zur Notwendigk wurde, fand man es unmöglich, anliegen Grundstücke zu einem Preise zu erwerben, ihre Verwendung als Bauplätze zu Fabri zwecken vorteilhaft erscheinen liess; zog daher aus der Stadt nach dem 54 englis Meilen weiter südlich gelegenen Orte Nor Kankakee. Der Name dieses Ortes wu später zu Ehren der Fabriksbesitzer in "Bra ley" umgewandelt, da die Ansiedlung einer altrenommirten Fabrik mit ihren Hundert von Arbeitern als ein solcher Verewigun würdiges Ereigniss erachtet wurde.

Viele Arten von Geräten und Maschin werden hier fabrizirt, und wir bilden einige derselben ab. Die berühmten "Ga City Clipper" Gangpflüge werden seit m als einem halben Jahrhundert in solcher Gu angefertigt, dass sie sich des höchsten R erfreuen. Sie stehen in vielen Ländern Gebrauche und sind ihrer geeigneten Fo und der ausserordentlichen Nachgelassenh des Stahles halbern, aus dem die der Abnut am meisten ausgesetzen Bestandteile, die denkbar leichten Zug und lange Gebrau fähigkeit zusichern, sehr beliebt. Der abgebildete "Poleza" Gestellpflug ist m lerer Grösse und ganz aus Stahl und gebaut, was ihm Stärke und geringes Gew verleiht. Das Zugscheit ist durch St mit dem Hinter- und Furchenrad verbun so dass diese Räder stets in gerader La bleiben, wodurch jeder Seitendruck Umbiegen an Ecken oder anderwärts ver den wird. Sie besitzen den oben erwähn "Garden City Clipper" Felgenring und hal bei angemessener Sorgfalt viele Jahre.

Die doppelkämmige, vollkommen aus St gebaute Heupresse, die sich gleichfalls unserer Abbildung befindet, ist eine wun bar starke und kompakte Maschine. Sie ka auf gewöhnlichen Landstrassen von z Pferden gezogen und notfalls auch von einem Pferde getrieben werden; zwei Pfer giebt sie nur leichte Arbeit. Zehn Tonn per Tag sind ihre Durchschnittsleistung. presst das Heu so fest, dass ein gewöhnlich Güterwagen zum Vollgewicht damit belad werden kann. Sie kann auch zum Press von Stroh, Haar, Hobelspähnen und d gleichen, im lockeren Zustande vielen Rau beanspruchenden, und deshalb oft zu Balle gepressten Artikeln verwendet werden. wird in drei Grössen gebaut, deren Balle raum beziehungsweise 14 x 16, 16 x 18 u 17 x 22 Zoll gross ist.

Der Fabrik-katalog steht Interessenten derzeit zur Verfügung, wie auch Preislisten Zahlungsbedingungen. Die Firma ist dur aus zuverlässig und widmet allen ihr zugehe den Anfragen prompte Aufmerksamkeit.

WIE DIE GEFLOCHTENEN "KEYSTONE" DRAHTZÄUNE ANGEFERTIGT WERDEN.

Das Thema über Umzäunungen interessirt die Landwirte und Grundbesitzer der ganzen Welt im gleichem Maasse. Wir führen unseren Lesern auf Seite 52 eine besondere Art von Umzäunung vor, wie sie von der "Keystone Woven Wire Fence Co." (Drahtgewebe-Umzäunungs-Fabrik) in Peoria, Illinois, Veireinigte Staaten von Nord-Amerika, geliefert wird.

Die obere und untere Querstange bestehen aus zwei Drähten Nro. 12, die zusammengedreht sind. Die Zwichenstangen sowohl, wie auch die Stütz-Kreuzstängen, sind aus Draht derselben Stärke angefertigt, den Figur 1 in natürlicher Grösse darstellt.

Wie aus Figur 2 ersichtlich ist, wird der Draht der Stütz-Kreuzstängen zuerst mit den zwei Drähten der oberen Querstange verflochten, kreuzt dann alle Zwischenstangen und ist an den Durchschnittspunkten mit diesen wieder verflochten. Er wird darauf in die zwei Drähte der unteren Querstange auf 30 Centimeter geflochten und von da nach oben geleitet und mit den Zwischenstangen in derselben Weise verbunden, worauf er wieder auf 30 Centimeter mit den zwei Drähten der oberen Querstange verflochten wird und wieder, wie oben beschrieben, seinen Weg nach unten nimmt.

Der endlose, in die Stränge eingeflochtene, von Stütze zu Stütze gehende Draht macht den Zaun vollkommen glatt, und verhindert das Aufdrehen und Losgehen der Drähte von den horizontalen Strängen.

Die Stütz- oder Bindedrähte sind an den Kreuzungspunkten mit den horizontalen Strängen zusammengedreht, so dass sie die vollkommenste Verbindung herstellen, und das Abrutschen derselben unmöglich wird. In dieser Hinsicht is der "Keystone" allen anderen Drähtzäunen überlegen, bei denen der Draht nur um die horizontalen Stränge gewunden, und wo ein Abrutschen möglich ist, das die Nützlichkeit und das gefällige Aeussere des Zaunes sehr in Frage stellt.

Die Konstruktion der "Keystone" Zäune ist zum Einhegen von Ferkeln und Schweinen, Schafen, Pferden, Vieh und anderem Getier, wie auch als Feldzaun besser und vorteilhafter geeignet als alle anderen Fabrikate gleichen Zwecks. Bei seiner Stärke und Glätte kann der "Keystone" Zaun weder die Tiere verstümmeln noch dem Fliesse der Schafe Schaden zufügen.

Hitze und Kälte haben keinen Einfluss auf die "Keystone" Zäune. Wie Figur 6 zeigt, sind die Drähte schräg zusammengedreht, befinden sich also in einer natürlichen Lage. Sobald die horizontalen Drähte sich bei kaltem Wetter zusammenziehen und verkürzen, stellt die hierdurch an den schrägen Maschen in wagerecht ausgeübte Streckung die richtige Länge wieder her, wobei die Drähte die in Figur 5 ersichtliche Form annehmen. Der Unterschied in der Form der Maschen ist hier etwas übertrieben, damit das Prinzip der Streckung klarer hervortrete.

In Figur 7 zeigen die zusammenhängenden Linien die natürliche Lage der Maschen, die punktirten Linien hingegen die Lage derselben Maschen unter dem Einfluss der durch die Kälte bewirkten Zusammenziehung. Das Geflecht wird immer in seine natürliche Lage zurückgezogen, sobald die Ausdehnung der wagerechten Stangen dies zulässt.

Dieselbe Fabrik liefert auch eine grosse Auswahl von Eingangstüren einfachster sowie auch reichverzierter Form, wie auch die feinsten Einfassungen für Rasenplätze. Um Kataloge und Preislisten wolle man sich an die Firma, Keystone Woven Wire Fence Co., Peoria, Illinois (Vereinigte Staaten von Nord-Amerika), wenden.

PUTZMÜHLEN FÜR LANDGÜTER UND MAGAZINE.

Die Firma The Johnson & Field Manufacturing Company in Racine, Wisconsin, Vereinigte Staaten von Nord-Amerika, hatte die Pariser Weltausstellung mit vier ihrer wohlbekannten Putzmühlen (siehe Abbildung Seite 40) für landwirtschaftliche und andere Zwecke beschickt; dieselben waren am Eingange zur berühmten "Maisküche" aufgestellt. Die Firma gehört zu den grössten Putzmühlenfabriken der Welt, und hat sich speziell durch ihre staubfreien Getreide- und Samenreiniger einen grossen Ruf erworben. Seit mehr als zwanzig Jahren baut diese Fabrik Maschinen zum Reinigen von Getreide, und langjährige Erfahrung in dieser Spezialität giebt den Leitern der Fabrik praktische Anhaltepunkte über die an Reinigungs- und Sortirmaschinen für Getreide und Samen gestellten Anforderungen, die in der Hauptsache Dauerhaftigkeit, grosse Leistungsfähigkeit und vollkommene Arbeitsleistung umfassen. Es its stets ihr Streben gewesen, ihre Maschinen den fortwährend gesteigerten Forderungen entsprechend zu konstruiren. Wie vollkommen sie dieses Ziel erreicht haben, beweist ihr grosser Kundenkreis zur Genüge.

Die für landwirtschaftliche Zwecke bestimmte "Racine" Putzmühle ist viel leistungsfähiger als alle anderen derartigen Maschinen im Reinigen aller Arten Getreide und Samen. Sie ist äusserst stark gebaut und sehr dauerhaft, und ihre Zahnräder befinden sich sämmtlich innerhalb der Mühle, so dass sie vor Beschädigung geschützt sind. Die Maschine wird zur Versendung zerlegt und kann mit leichter Mühe wieder montirt werden. Die "Racine" Magazin-Putzmühlen sind nach denselben Grundsätzen wie die anderen Putzmühlen dieser Firma gebaut, nur sind sie bedeutend grösser, schwerer und stärker und können mittelst Göppel, Dampf oder Hand betrieben werden. Die grösseren Arten sind ausschliesslich für Kraftbetrieb gebaut und hauptsächlich auf Göppel berechnet.

Die doppelten und einfachen, staubfreien Getreide- und Samenreiniger und Sortirer unterwerfen die Körner einer gründlichen Behandlung mittelst Saug- und Blasfächer, und lassen dieselben durch mehrere Sieb- und Netzkombinationen laufen. Zur Erlangung der für den Markt oder die Mühle gewünschten Qualität des Getreides oder Samens stehen diese Maschinen unübertroffen da.

Die für den Export bestimmten Maschinen dieser Fabrik sind ganz besonders zur Versendung eingerichtet, und lassen sich flach in Kisten verpacken. Für Mexico und Süd-Amerika werden sie mit besonders starkem, eisenbeschlagenem Körper angefertigt, um der grossen Hitze des dortigen Klimas besser zu widerstehen.

Diese Maschinen sind in allen Getreide-, Kaffee- oder Reisbauenden Ländern des Auslandes sehr berühmt, und zwar in Folge der vorzüglichen Vorrichtungen die anderen Putzmühlen abgehen.

Die Fabrik fertigt auch Häckselmaschinen, Ackerwalzen und breitwürfige Säemaschinen für den Ausfuhrhandel an.

Händler, die diese Maschinen noch nicht kennen, und sich davon überzeugen wollen, was die Mechanik auf diesem Gebiete geleistet hat, wollen sich den illustrirten Fabrikskatalog kommen lassen, in welchem alle Einrichtungen und Verbesserungen der Maschinen genau beschrieben und erklärt sind, wodurch die Einfachheit und Gründlichkeit ihres Arbeitsverfahren ganz klar wird. Man wende sich dieserthalben an die Firma Johnson & Field Manufacturing Company, Racine, Wisconsin, Vereinigte Staaten von Nord-Amerika.

Einer der Misbräuche unseres Zeitalters, der abgeschafft werden muss, ist das gegenwärtig bestehende Credit-System. Jeder ehrliche Mann besitzt das Verlangen, das zu bezahlen, was er bezieht. Bei den gegenwärtigen Zuständen wird es Tausenden zur Unmöglichkeit, genug für das knapp Nötige zu ersparen. In europäischen Ländern liegt weniger Notwendigkeit zum Creditgeben als in irgend einem anderen Teile der Welt vor—von den Vereinigten Staaten von Nord-Amerika abgesehen. Diese Sachlage gereicht den Millionen seiner fleissigen Bewohner zur Ehre. In anderen Ländern findet sich Handel und Verkehr dadurch behindert, dass es notwendig ist, dem Käüfer eine Frist zu gewähren, damit er das zur Zahlung des Ankaufspreises nötige Geld, oder wenigstens einen Teil desselben, durch die Verwendung der Maschine oder des Gerates erst flüssig machen könne. An diesem Stand der Dinge trägt jedoch niemand, kein Land und keine Regierung die Schuld. Diesen Verhältnissen ist auch nicht unmittelbar abzuhelfen. Das Hilfsmittel hierfür kann weder in Gesetzen, noch in Maassregeln, Erlässen oder Verträgen gefunden werden; es muss durch natürliche Entwicklung von selbst kommen, und diese Entwicklung is ein Kampf. Dieser Kampf kann jedoch wesentlich dadurch erleichtert werden, dass die besten Maschinen und Werkzeuge als beste Stütze der Arbeit zu Hilfe gezogen werden. Die Wahrheit dieser Behauptung wird alle Tage bestätigt und auf ihr beruht zum grossen Teil die an den amerikanischen Gerätefabrikanten gerichtete Nachfrage nach seinen besten Fabrikaten.

ADRIANCE, PLATT & CO.

Schon von Anbeginn der von der amerikanischen Kommission der Pariser Weltausstellung von 1900 geplanten Arbeiten drängte sich die Ueberzeugung auf, dass der den Erntemaschinen in Gruppe VII der 35. Klasse zugewiesene Raum sich als völlig ungenügend erweisen würde, wenn die amerikanischen Industriellen in annähernd würdiger Weise vertreten wären. Es erschien sogar wahrscheinlich, dass irgend welche zwei beliebigen Aussteller den ganzen zur Verfügung gestellten Raum gern allein ausgefüllt hätten. Wie auf dem zugewiesenen, engen Raume eine genügend vollständige Ausstellung zu veranstalten sei, wurde den Industriellen zu einem äusserst schwierig zu losenden Probleme, das jedoch, wie allgemein anerkannt worden, von der Firma Adriance, Platt & Co., von Poughkeepsie, New York, glänzend gelöst worden ist.

Der Grand Prix, der höchste Preis, der Ausstellern dieser Klasse überhaupt zuerkannt wurde, ist der Firma Adriance, Platt & Co. verliehen worden und es war dies eine wohldiente Ehre, die sich den auf früheren Weltausstellungen davongetragenen Lorbeeren dieser Firma würdig anreiht. Die Firma weist denn auch mit gerechtem Stolze darauf hin, dass ihre Maschinen in Europe im Jahre 1900 bei auf freiem Felde angestellten Versuchen mehr Siege davontrugen, als die aller anderen Industriellen.

Im Bau ihrer Maschinen ist diese Firma besonders bestrebt, demselben möglichst einfache und richtige mechanische Prinzipien zu Grunde zu legen, indem sie nur wohlerprobte mechanische Vorrichtungen zur Verwendung bringt, die im Falle der Abnützung eine sofortige Ergänzung einzelner Teile durch neue Stücke unter bestmöglicher Vermeidung, andere Maschinenteile auseinander zu nehmen, möglich machen.

Unter den hier ausgestellten, zur Feldarbeit bestimmten landwirtschaftlichen Maschinen verkörpert der Adriance "Buckeye" Getreidemäher die im Jahr 1858 von dem verstorbenen John P. Adriance zur Ausführung gebrachten charakteristischen Eigenschaften, die die Mähmaschine als eine erfolgreiche Neuerung auf diesem Gebiete erscheinen liessen und ihr sofort bei den Landwirten zu grosser Beliebtheit verhalfen. Die in dieser Maschine zur Anwendung gelangten Grundsätze haben sich seither als vollkommen richtig bewährt, und sie diente für viele anderen Maschinen, die sich in ihrer Bauart an sie anschlossen, zum Vorbilde. In dem auf der Ausstellung vorgeführten Schweizerdorfe erregten dis neben einander stehenden "Buckeye" Mähemaschinen von 1858 und 1900 sicherlich die ungeteilte Aufmerksamkeit der Besucher, da sie gleichzeitig das unverkennbare Vorwiegen der ursprünglichen Grundsätze und den mittlerweile zur Geltung gelangten Fortschritt in Bauart und Vervollkommnung einzelner Bestandteile in ihrem Einfluss auf die allgemeine Brauchbarkeit klar vor Augen führten, die in der neuen Maschine so stark zum Ausdruck kommen.

Die nächste in natürlicher Grösse ausgestellte Maschine war der "Adriance" Garbenbinder. Er wurde zuerst im Jahre 1888 gebaut, und zeigt eine entschiedene Abweichung von allen seither für diesen Zweck gebauten Maschinen, da er leichter, einfacher, solider und für den Transport bequemer ist, und was einse Arbeit, Mähen, Handhabung und Ablegen des Getreides anbetrifft, mit weit geringerem Aufwand an Betriebskraft leistet.

Das von derselben Fabrik ausgestellte, prachtvolle Modell eines sogenannten Elevator-Garbenbinders ist zweifelsohne das einzige Modell seiner Art, das je in so kleinem Maassstabe hergestellt worden ist, und is dabei von solcher Vollkommenheit, dass alle Leistungen, sogar die des Knotenschlingens, auf ihm in tadellosester Weise ausführbar sind.

Die Firma Adriance, Platt & Co. hat ihre Bureaux in New York und widmete schon frühzeitig dem Exportgeschäfte ihre vollste Aufmerksamkeit zu; sie entwickelte diesen Zweig ihres Geschäftes mit solchem Erfolge, dass die Errichtung von Bureaux und Warenlagern im Auslande bereits vor Jahren notwendig wurde. Im Jahre 1882 wurde das Exportgeschäft dieser Firma Herrn F. Mink übertragen, der den Bureaux in Paris, Quai Valmy, No. 159, und in Hamburg, im Artushof, vorsteht.

Die Fabriksanlagen befinden sich in kurzer Entfernung von dem grossen Hafen, von New York, stromaufwärts am östlichen Ufer des herrlichen Hudsonflusses, so dass sie auf einer Seite den Vorteil eines der grössten schiffbaren Ströme der Welt geniessen, während sie auf der anderen Seite mit den Geleisen der New York Central Eisenbahn, dieser grossen viergeleisigen Bahnlinie des kolossalen Schienennetzes Amerikas, in direkter Verbindung stehen. Noch günstigstere Tranportverhältnisse sind schwer zu finden.

MODERNE WAGEN.

Die Vereinigten Staaten von Nord-Amerika übertreffen alle anderen Länder in der Erzeugung von landwirtschaftlichen Geräten, Maschinen, Werkzeuge und Utensilien. Dies trifft ganz besonders auf die Wagenfabrikation zu. Kein anderes Land der Erde is in der Fabrikation von Fuhrwerk für Privatgebrauch, Maschinentransport, Landwirtschaftsprodukte und Verfrachtung so weit vorgeschritten.

Der gewöhnliche Wagen für landwirtschaftliche Zwecke, der in Amerika gebaut wird, besitzt eine garantirte Tragfähigkeit von 1,500 Kilo; die Tragfähigkeit vieler dieser Wagen übersteigt jedoch diese Zahl bei weitem, erreicht manchmal nahezu 10,000 Kilo.

Eine der grössten und hervorragendsten Wagenfabriken Amerikas befindet sich in Racine, Wisconsin, wo die Firma Fish Bros. Wagon Company die einzig dastehenden, "echten Original" Fish Bros. Wagen anfertigt. Wir verdanken der Freundlichkeit dieser Herren die diesen Artikel erläuternden Abbildungen. Die Fabrik befindet sich seit mehr als einem Vierteljahrhundert in Racine, Wisconsin; sie wird alljährlich bedeutenden Verbesserungen unterzogen und ist in ihrem gegenwärtigen Stadium in jeder Hinsicht das Muster einer modernen Wagenfabrik.

Die hier abphotographirten Empfehlungsschreiben stellen nur einen kleinen Teil der bedeutenden Sammlung derartiger Schreiben, die sich in dieser Fabrik befindet, und die sich auschliesslich aus freiwillig dargebotenen Zeugnissen zusammensetzt; sie rühren alle von angesehenen Leuten her und legen in Folge dessen für die Beliebtheit dieser Wagen die schmeichelhaftesten Beweise ab. Sie rühren von allen Teilen des Landes her, vom Atlantischen zum Stillen Ocean, und die verschiedenartige Beschaffenheit der Ladungen weist in interessanter Weise auf die verschiedenen Zwecke hin zu denen ein Wagen in den verchiedenen Gegenden dienen kann.

Interessant is auch, dass Wagen von vol kommen gleicher Bauart zum Transport vo Bauholz, Steinkohlen, Schindeln, Heu, Weize Mais, Kartoffeln, Baumstämmen, Baumwoll Steinen, Wassermelonen, Dauben u. s. w. wie auch zum Transporte von Dampfkessel und Maschinen dienen.

Die amerikanischen Wagen sind überall in Auslande sehr geschätzt, und die hiesigen Wagenfabriken erfreuen sich eines ausgedehnten, blühenden Exportgeschäfts. Dies bezieht sich auch ganz besonders auf Mexico. Die nach Mexico oder anderen Ländern exportirten Wagen der Firma Fish Bros. Wagon Co., Racine, Wisconsin, stellen stets in höchstem Maasse zur Zufriedenheit, und durch die erzielten, glänzenden Resultate hat sich auch der Kundenkreis dieser Fabrik stetig erweitert. Der prachtvoll ausgeführte Katalog, der die verschiedenen Modelle, das zu ihren Bestandteilen verwendete Material und ihre äusserst solide Bauart zur Darstellung bringt, steht auf Verlangen gratis und franko zu Diensten.

DIE FABRIKSANLAGE DER FIRMA McSHERRY MANUFACTURING COMPANY.

In dieser Nummer unseres Blattes finden unsere Leser auf Seite 58 die Abbildung einer der grössten Reihensäemaschinen-Fabriken der Welt, die Fabrik der Firma McSherry Manufacturing Company, in Middletown, Ohio, Vereinigte Staaten von Nord-Amerika. Die von den gegenwärtigen Besitzern der Fabrik wie von ihren Vorgängern angefertigten Reihensäemaschinen sind unter den Händlern von landwirtschaftlichen Maschinen sowohl, wie auch den Landwirten des In- und Auslandes, die sich mit Weizenkultur befassen, seit geraumer Zeit aufs Beste bekannt. Die ersten aus dieser Fabrik hervorgegangenen "McSherry" Reihensäemaschinen wurden in Indianapolis, Indiana, Vereinigte Staaten von Nord-Amerika, im Jahre 1858 gebaut, und im Jahre 1862 veranlasste die Stadt Dayton, Ohio, Vereinigte Staaten von Nord-Amerika, den Patentinhaber und Gründer der Fabrik diese nach dort zu verlegen. Die gegenwärtigen Fabriksanlagen wurden in Folge des Raummangels, der sich aus der Ausbreitung des Geschäftes ergab, und weil es am alten Orte an verfügbaren Bauplätzen fehlte, im Jahre 1893 errichtet, und seit jener Zeit werden auch die "McSherry" Reihensäemaschinen in Middletown, Ohio, angefertigt.

Die McSherry'sche Reihensäemaschine erhielt auf vielen der grössten Ausstellungen der Vereinigten Staaten von Nord-Amerika die höchsten Auszeichnungen, so auch auf der Trans-Mississippi-Ausstellung, die im Jahre 1898 in Omaha, Nebraska, abgehalten wurde, und wo sie im Wettbewerbe mit vielen anderen Maschinen dieser Art die höchste Auszeichnung und eine goldene Medaille davontrug. Die Nachfrage nach diesen Maschinen nahm dergestalt zu, dass gegenwärtig Tausende davon alljährlich geliefert werden, und die Nachfrage steigt im Auslande sowohl, als auch im Inlande, ganz bedeutend.

Die Fabrikanten der McSherry'schen Reihensäemaschinen bauen prinzipiell nur Maschinen bester Qualität, und benutzen hierzu das beste auf dem Markt erhältliche Material, wie sie auch ausschliesslich nur erfahrene Arbeiter anstellen. Eine Abbildung einer dieser Reihensäemaschinen befindet sich an anderer Stelle in dieser Nummer.

EXPORT IMPLEMENT AGE

POUR LA CIRCULATION À L'ÉTRANGER EXCLUSIVEMENT.

Journal indépendant, dévoué exclusivement au intérêts du commerce d'exportation de machines d'agriculture, pompes, moulins à vent, outils de fermes et de crémerie accessoires.

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Le steamer "Helenes," parti il y a quelques jours de New York pour la République Argentine, avait à bord une cargaison très importante d'instruments agricoles. La République Argentine est à la tête de ce mouvement. Les autres pays de l'Amérique du Sud font des progrès constants. Les instruments agricoles venant des États-Unis sont de plus en plus appréciés. Ils résistent à l'usage et répondent à toutes les exigences.

Les lecteurs de L'EXPORT IMPLEMENT AGE ont en ce moment une grande responsabilité en raison des nombreuses occasions qui se présentent de se procurer des instruments agricoles et des machines de ferme à des conditions favorables. Les fabricants américains sont toujours disposés à faire connaître leurs prix et la valeur de leurs produits. Les cotes de quelques variétés ont été réduites, et tous les marchands de l'étranger devraient prendre immédiatement des mesures pour se renseigner à ce sujet.

Les statistiques de l'exportation des instruments agricoles prouvent que, tandis que les États-Unis gagnent du terrain, il y a place pour des hommes entreprenants dans tous les pays d'Europe, des Amériques Centrale et Méridionale et d'ailleurs qui voudraient développer le commerce des instruments agricoles dans les genres fabriqués aux États-Unis. On profite des avantages offerts, et l'agriculture sur des bases plus économiques est en progression.

Un des facteurs prochains qui aideront les agents d'instruments agricoles à introduire ces instruments sur les marchés étrangers, est la concurrence—la concurrence entre fermiers. L'importance de ce facteur se voit particulièrement aujourd'hui dans la culture de la betterave à sucre allemande. Le même esprit de concurrence s'étendra à d'autres branches d'agriculture. Il en résultera qu'avant longtemps le fermier reconnaîtra la nécessité de posséder les meilleurs instruments agricoles pour ses besoins spéciaux L'économie dans la production est le problème toujours actuel, et le meilleur instrument et la meilleure machine agricole contribuent le plus à ce résultat.

Une des premières impressions produites sur les visiteures de l'Exposition de Paris, a été l'envie d'en connaître d'avantage au sujet des fabricants des produits exposés; et beaucoup de ceux qui ont examiné les instruments agricoles américains exposés ont éprouvé et exprimé le desir de savoir davantage du pays et dees gens qui pouvaient envoyer de pareilles preuves d'habileté. Beaucoup de ventes d'instruments agricoles ont été faites à des agriculteurs européens, et les marchandises ont été livrées. Si nos amis de l'étranger veulent maintenant poursuivre de près ces avantages et faire connaître les marques américaines d'instruments agricoles ainsi que les méthodes et les ressources américaines, il ne pourra en résulter que négoce et profit pour tous les intérressés.

Il y a actuellement aux États-Unis une double tendance, dont tous les négociants des pays situés au-delà des mers devraient prendre note ; une tendance à la hausse des prix, à cause de l'augmentation des salaires et de la demande plus considérable dans le pays même, et une tendance à la baisse de ces mêmes prix causée par le developpement des moyens de production. Les marchands d'instruments agricoles devraient noter l'effet que cette double tendance aura sur leurs intérêts. Un des effets est d'obliger les fabricants qui ont une réputation à se défendre, à faire de meilleurs instruments, à employer de meilleur bois et de meilleur acier et à amélorer la qualité dans tous les détails. La résultante de ces deux forces sera de donner aux acheteurs de la meilleure qualité. Il ne reste que peu de marge pour une baisse de prix. Les prochains six mois offriront des occasions d'achats exceptionnellement bonnes.

Le vapeur "Star of England," parti récemment de New York pour l'Australie, a emporté pour $58,000 de quincaillerie américaine, ce qui est beaucoup de quincaillerie expédiée par un seul navire. Les principales maisons d'importation de Sidney et de Melbourne ont, aux États-Unis, des agents qui achétent en grandes quantités. Il y a là une indication pour les marchands d'instruments agricoles dans le monde entier. S'ils pouvaient arriver à se faire représenter par une personne sachant comment les approvisionner selon leurs besoins, l'introduction des instruments agricoles américains dans le monde entier ferait des progrés beaucoup plus rapides. Il y a des centaines de marchands qui aimeraient à vendre dix instruments agricoles américains alors qu'ils n'en vendent qu'un. Des relations plus directes sont nécessaires et il est possible de les établir. On laisse échapper trop d'excellentes occasions de vendre des instruments agricoles américains par suite du manque des relations voulues entre les marchands à l'étranger et les fabricants aux États-Unis. L'EXPORT IMPLEMENT AGE se propose de diminuer ces difficultés.

Les habitudes nationales sont difficiles à déraciner. Quelques marchands du continent européen qui ont des attaches en Angleterre, mais qui admirent le génie déployé par les américains dans la construction des instruments agricoles, sont désappointés en constatant que les inventions et les perfectionnements américains ne sont pas adoptés par les concurrents de l'Amérique en matière d'instruments agricoles. Il y a beaucoup de raisons pour qu ils ne le fassent pas et ne puissent pas le faire. Comme nous le disons, les habitudes nationales sont difficiles à déraciner. On ne peut pas débarrasser l'esprit d'un homme des idées qui y ont été inculquées, simplement en lui montrant qu'il y a moyen de mieux faire. Ceux qui désirent des instruments agricoles américains viendront en Amérique les chercher. Ceux qui veulent avoir cette année quelque chose de meilleur que ce qu'ils avaient l'an dernier ne peuvent pas perdre de vue ce qui se passe aux États Unis. L'histoire du développement de l'industrie des instruments agricoles le démontre. Des examples d'attachement aux vieilles méthodes et aux inventions gênantes s'offrent à tous ceux qui sont familiers avec les méthodes des pays autres que les États-Unis.

Les taux changeants du fret par mer ont été une des difficultés confrontant nos amis des autres pays qui cherchent à introduire sur une plus vaste échelle les instruments agricoles des États-Unis. Autrefois, les taux dépendaient d'un certain nombre de choses qui devaient naturellement les affecter, mais qui, par là-même, entravaient le commerce. L'obstacle a sans aucun doute été serieux, surtout lorsqu'on en est arrivé à une question de concurrence avec un fabricant d'instruments agricoles dans un autre pays où le taux du fret était connu et fixe, et qu'on pouvait se baser sur li en établissant un prix pour son client. Cet obstacle, aussi sérieux qu'il ait été, sera graduellement éliminé par la venue de navires naviguant à des époques déterminées entre les ports Américains et étrangers, comme cela est le cas aujourd'hui pour quelques lignes entre New York et certains autres ports. La régularité des taux du fret est fort à désirer. Elle vient. Il sera bientôt possible pour un marchand de l'Europe centrale de commander un instrument agricole en Amérique et d'aviser son client de l'époque à laquelle l'instrument sera livré et de savoir lui-même quel est son bénéfice.

Les marchés européens sont devenus, depuis une date relativement récente, des centres actifs d'approvisionnement pour les besoins croissants des populations. Les négociants et les manufacturiers à l'étranger se demandent combien de temps cela durera. L'économie politique, qui est devenue une partie de la croissance américaine, garantit l'avenir. La grande activité industrielle de l'Allemagne, et l'industrie croissante en Italie, en France et en Espagne, doivent et peuvent augmenter constamment, d'année en année. Tel a été le cas aux États-Unis, avec des interruptions de temps à autre. Les demandes auxquelles on fait face aujourd'hui en Europe, sont pour ainsi dire sans limites. Il y a un dicton aux États-Unis d'aprés lequel la production augmentera jusqu'à ce que chaque homme, chaque femme, et chaque enfant aient des repas complets de nourriture saine et substantielle, un intérieur bon et comfortable, un approvisionnement abondant de bons vêtements, et quelque chose de reste. Telle est la mesure américaine des choses nécessaires Ce sont les exigences instinctives de tout être civilisé. C'est un idéal auquel tendent notre éducation et nos progrès, et c'est résultat ou un état qu'il est possible d'atteindre. Cet idéal n'est que juste. C'est un état auquel tout être humain industrieux a le droit d'aspirer. C'est un ideal qui sert à nous pousser à produire davantage et à faire mieux, et à nous élever des conditions qui nous entourent à des conditions plus avantageuses.

TOUT UN TRAIN CHARGÉ DE MACHINES DE FABRICATION AMERICAINE.

Encore une de nos grandes fabriques américaines d'instruments aratoires mécaniques qui vient tout récemment d'expedier un train complet chargé exclusivement de machines. Cet envoi provenait des usines de Port Huron (Michigan) à destination d'une agence de placement de Wichita (Kansas). Les industriels entreprenants dont il s'agit sont les directeurs de la "Port Huron Engine and Thresher Company" (Cie de construction de machines et Batteuses à vapeur), de Port Huron (Michigan).

Le train, habilement formé, se composait de vingt-six wagons chargés de machines à leur pleine capacite. Une voiture de voyageurs y était ajoutée pour les employés chargés du service du train et les représentants de la maison. Toutes les machines portées par le train étaient vendues avant de quitter l'usine. Et bon nombre de wagons chargés de machines étaient déjà partis, devançant le train spécial, pour servir des clients dont les ordres pressés ne pouvaient attendre l'arrivée du train. Enfin, plusieurs wagons suivirent encore, chargés de machines qui n'avaient pu être terminées à temps pour le train spécial.

La dernière voiture de machines, dans le train, portait comme charge un moteur à vapeur "compound" de 15 chevaux de force et une forte machine électrique dynamo. Le moteur a eu ses feux allumés tout le long du voyage: équipé de nombreux sifflets et sirènes, il fournissait la musique, bruyante et abondante; la nuit il faisait marcher la machine dynamo, fournissait l'éclairage électrique pour le train et alimentait encore de force et de lumière une lampe à projections campée au sommet d'un séparateur. D'innombrables bannières flottaient sur tout le train, lequel offrait au total un aspect remarquable.

Aux stations où le train s'arrêtait pour la nuit, on donnait des représentations avec projections stéréoptiques photographies animées et programme de chant. Une distribution de nouveautés réclames avait lieu à chaque arrêt. Un concours avec prix était ouvert pour les meilleures photographies du train prises entre le départ de l'usine et l'arrivee à destination. Nous reproduirons une belle photographie du train dans un numéro ultérieur. Il y avait foule pour acclamer l'arrivée du train à chaque station.

La maison si active et progressive dont nous parlons a commencé ses affaires en 1860, sous la même raison sociale et la même direction qu'aujourd'hui. Elle jouit d'une spécialité reconnue dans la fabrication des machines agricoles à vapeur et de leurs accessoires. La liste de ses constructions comprend : machines à battre, décortiqueuses de maïs, outillages de scierie, locomobiles de route, moulins à avoine et graines fourragères, citernes portatives sur roues nouveau modèle, et appareils analogues. C'est l'intention de la maison de continuer à étendre ses spécialités actuelles, pour arriver à fabriquer à peu près tout ce qui peut être mû par vapeur dans l'industrie agricole. Ses machines se prêtent au mieux à la mache actionnée par moteurs portatifs ou locomobiles à traction: elles comprennent les machines pour construction de routes, et des wagons et wagonnets à traîner par locomotives ou locomobiles. La maison garantit les épreuves, les matériaux et matières premières, l'excellence de l'exécution, les poids et les dimensions.

Le Carnet de données ou spécifications pour 1900 ("1900 Book of Specifications") vient d'être publié par la maison "Port Huron Engine and Thresher Company" de Port Huron (Michigan). Demandez-le. La maison fait l'exportation.

PÉKIN EN AMÉRIQUE.

Le nouveau Pékin d'Amérique est aussi bourré d'idées que le vieux Pékin chinois est bourré de population. Et ces idées sont, à leur tour, bourrées de splendides inventions à la hauteur du jour, supprimant le vieil et baroque outillage agricole d'hier. Aussi ces idées, les meilleures, ont enfanté les meilleurs mécanismes pour la meilleure culture possible des campagnes et la production des meilleures récoltes.

Ces résultats s'incarnent dans les Étêteuses "Hodges," les Faucheuses "Hodges" dites "Hercules," les Faucheuses "Acmé," les Lieuses "Acmé," les Faneuses à dents à ressort, les Râteleuses, les Ameulonneuses, les Chaînes de couvre-meule et les petits outils de fenaison. On y trouve tous les dispositifs de détail nouveaux que l'expérience a pu réclamer et le génie le plus ingénieux suggérer. Chaque retour de saison les voit devenir plus pratiques et capables de meilleurs services. Le fer doux remplace la fonte grise, et l'acier supplante les pièces en bois. L'expédition de tous ces appareils est toujours précédée d'un essai véritable, en pleine marche pratique. Tous les détails sont soigneusement prévus et attentivement étudiés.

C'est la maison Acme Harvester Company à Pékin, Illinois (États-Unis), qui fabrique l'outillage dont les fermes étrangères ont besoin. Entrez en correspondance avec elle; votre culture et vos affaires en bénéficieront.

L'USINE DE LA MAISON McSHERRY MANUFACTURING COMPANY.

Dans ce numéro de notre journal, à la page 58, nos lecteurs trouveront un dessin représentant l'usine de la maison McSherry Manufacturing Company, à Middletown, Ohio, un des plus importants fabricants de semoirs à grain du monde entier. Les semoirs fabriqués par la maison McSherry Manufacturing Company et ses prédécesseurs sont connus depuis longtemps, et sous un jour favorable, du commerce des instruments agricoles et des fermiers des États-Unis, et de ceux des pays étrangers où l'on se livre à la culture du blé. Les premiers semoirs McSherry ont été fabriqués à Indianapolis, Indiana, États-Unis de l'Amérique, en 1858, et, en 1862, la ville de Dayton, Ohio, États-Unis de l'Amérique, a engagé l'inventeur breveté et le fondateur de l'affaire à installer sa fabrique dans cette ville, où les semoirs à grain McSherry ont été fabriqués pendant trente-deux ans. En 1893, par suite de l'état d'encombrement de la fabrique et de l'impossibilté d'acquérir plus de terrain, la fabrique actuelle a été construite et la fabrication des semoirs McSherry s'est faite depuis lors à Middletown, Ohio, États-Unis de l'Amérique.

Le semoir McSherry a obtenu la plus haute réecompense dans beaucoup des plus grandes expositions tenues aux États-Unis, y compris l'Exposition du Trans-Mississippi, tenue à Omaha, Nebraska, États-Unis de l'Amérique, en 1898, où il a obtenu la plus haute récompense et la médaille d'or en concurrence avec beaucoup de machines de sa classe. Et la vente de ces semoirs a tellement augmenté qu'il s'en fabrique maintenant des milliers chaque année, la demande venant de l'étranger ainsi que celle de notre propre pays s'étant largement accrue.

Les fabricants des semoirs à grain McSherry ont toujours eu pour politique de construire des machines strictement de premier ordre, en se servant des meilleures matières qu'on puisse procurer sur le marché et en employant des artisans habiles dans leur partie. On trouvera dans ce numéro un dessin représentant un de ces semoirs.

TRAINS DE MARCHANDISES.

Une usine des plus importantes et des mieux montées des États-Unis vient d'expédier à ses succursales de vente plusieurs longs trains de marchandises, chargés de machines à battre, et toutes ces machines étaient livrées en exécution de commandes provenant des régions adjacentes.

La grosse maison dont nous parlons vient d'expédier des Batteuses, des Séparateurs, des Entasseuses à Vent, des Cultivateurs, des Planteuses et des Locomobiles à Traction. Les vastes usines ont dû marcher nuit et jour à leur maximum de production. On s'applique à rechercher de nouveaux perfectionnements importants pour la production de chaque nouvelle saison. La construction des machines tend à réduire au minimum les réparations nécessaires. Les qualitiés de marche et de travail et les éléments de solidité sont toujours l'objet d'une stricte attention dans les nombreux modèles que comporte une si vaste collection. Toutes les machines sont établies de telle sorte qu'il est impossible de les monter de travers. Elles sont donc particuliérement appropriées pour l'exportation et jouissent d'une vente considérable à l'étranger.

Il existe des catalogues aussi élégants de forme qu'exacts et instructifs. Pour les recevoir, en même temps que d'utiles renseignements, s'adresser à la maison Avery Manufacturing Company à Peoria, Illinois (États-Unis).

LES OUTILS À MAIN.

Pendant que les grandes machines américaines actionnées par chevaux ou par vapeur conquièrent la première place sur les marchés du monde, nos habiles constructeurs d'Amérique n'ont point négligé la production de la meilleure qualité d'outils et instruments aratoires maniés de main d'homme. Et leur fabrication d'outils à main a été marquée par un succès qui ne le cède point à celui remporté pour la perfection de leurs grandes machines.

Au rang des petits outils dont la réputation s'est établie à l'étranger, il faut citer la marque "Excelsior" de Fourches à Fumier, Fourches à Foin, Hoyaux de culture à manche, Râteaux de Jardin, Fourches à Charbon et à Coke, et les Fourches de Mineur et d'Éclusier. Tous ces outils se fabriquent en grande variété de modèles, avec la matière première la meilleure et la plus coûteuse. Ces articles s'exportent en tous pays.

C'est la maison Utica Tool Company à Utica, État de New-York (États-Unis), qui a la spécialité de cette fabrication. Fondée en 1840, la maison a été réorganisée en 1892 sous sa raison sociale actuelle. On trouvera un intérêt tout particulier à la lecture de ses catalogues révisés pour l'exportation, et les clients étrangers feront bien d'écrire à son siège social pour recevoir les éditions et illustrations les plus récentes. Il sera bon de faire cette démarche sans retard.

COMMENT SE FABRIQUE LA CLÔTURE KEYSTONE EN FIL DE FER ENTRELACÉ.

La question de clôture intéresse les fermiers et les propriétaires fonciers dans le monde entier. Nous faisons voir par des dessins à la page 52, le genre de clôture fabriqué par la maison Keystone Woven Wire Fence Company, de Peoria, Illinois.

Les barres supérieure et inférieure se composent de deux fils de fer No.12 tordus ensemble. Les barres intermédiaires de même que les barres transversales de support, sont faites avec du fil de fer du même calibre, dont la dimension réelle est représentée dans le dessin 1.

Comme on le verra en se reportant au dessin 2, la barre transversale ou fil de support est tordu d'abord avec les deux fils de la barre supérieure, puis il descend en croisant toutes les barres intermédiaires et est tordu avec chacune d'elles aux points d'intersection. Il est ensuite tordu avec les deux fils de la barre inférieure, environ 30 centimètres, puis il remonte, se rattachant de la même manière aux barres intermédiaires; il est de nouveau tordu avec les deux fils de la barre supérieure, environ 30 centimètres, puis il redescend comme on vient de le dire.

Le fil de support étant continu et tordu dans les câbles d'un bout à l'autre, il en résulte que la clôture est parfaitement unie et il n'y a aucune chance pour que le fil de support s'effile et se détache des barres horizontales.

Les fils de support ou d'attache sont tordus avec les barres horizontales aux points d'intersection, ce qui donne les raccords les plus parfaits et ne permet pas au fil de support de se déplacer. À ce point de vue, le Keystone est supérieur à toute autre clôture dans laquelle les fils de support sont simplement enroulés autour des barres horizontales, de sorte que les fils de support peuvent, en glissant, perdre leur position, ce qui détruit l'utilité et l'aspect de la clôture.

La construction de la clôture Keystone lui donne des avantages que ne possède aucune autre marque au point de vue de l'emploi comme clôture à pores, comme clôture à moutons, comme clôture à chevaux et à bétail et, en général, comme clôture pour les champs et les bestiaux. On peut aussi la rouler sous un petit volume, de sorte qu'elle est aisément portative. Elle est solide et unie, et n'arrache pas la laine des moutons ni ne mutile le bétail.

La chaleur ou le froid n'affecte pas la clôture Keystone. Comme le fait voir le dessin 6, les tortis ont une direction oblique, ce qui est leur position naturelle. Lorsque les fils horizontaux commencent à se raccourcir par l'effet du froid, la longueur supplémentaire est fournie par un faible redressement des tortis, qui prennent davantage la forme montrée dans le dessin 5. La différence de forme des mailles est légèrement exagérée de façon à faire voir plus clairement le principe.

Dans le dessin 7, les lignes pleines montrent la position naturelle du tortis: les lignes pointillées montrent la position du même tortis sous l'effet de la contraction ou du froid. Le tortis est toujours ramené à sa position naturelle dès que la dilatation des barres horizontales le permet.

La même maison fabrique également un bel assortiment de portes de fermes et d'ornement, ainsi que des clôtures d'ornement pour pelouses. Pour avoir le catalogue et les prix écrire à Keystone Woven Wire Fence Co., Peoria, Illinois, États-Unis de l'Amérique.

LA CHARRETTE MODERNE.

Les Etats-Unis sont à la tête de tous les autres pays pour la fabrication des instruments agricoles, des machines, des outils et des accessoires pour fermes. Cela est surtout vrai pour la fabrication des charrettes. Il n'y a pas de pays au monde qui ait fait, à grands pas, autant de progrès dans la fabrication des voitures de plaisance et des véhicules solides pour le transport des machines, des produits des fermes et du fret en général.

La moyenne de la charrettee de ferme fabriquée en Amérique est garantie pour pouvoir porter 1500 kilos. Il est intéressant de faire remarquer que les charges portées par quelques-unes de ces charettes dépassent de beaucoup ce poids. Quelquefois elles portent, sans effort, une charge de près de 10,000 kilos. Une des fabriques de charettes d'Amérique les plus importantes et les plus en vue est située à Racine, Wisconsin; c'est la maison Fish Brothers Wagon Company, qui fabrique la seule "originelle et véritable charrette Fish Bros." Nous devons à l'amabilité de cette maison les dessins se rapportant à cet article et publiés à la page 40-42. Cette compagnie existe à Racine, État de Wisconsin, depuis plus d'un quart de siècle. Chaque année, des améliorations considérables ont été apportées à la fabrique, et aujourd'hui c'est, à tous les points de vue, une fabrique moderne de charrettes.

Cette exhibition de photographies n'est qu'une faible partie de la vaste collection que la maison possède, et qui sont toutes des attestations volontaires, données par des personnes responsables; elles sont certainement une preuve flatteuse et évidente de la popularite de la charrette fabriquée par la maison.

La collection comprend des photographies prises dans toutes les parties du pays, de l'Atlantique au Pacifique, et la variété des charges indique d'une façon fort intéressante les produits des différentes parties du pays et les divers usages qu'on fait de la charrette.

Il est intéressant de noter que des charrettes de construction absolument identique sont employées pour transporter du bois de charpente, du charbon, des bardeaux, du foin, du blé, du maïs, des pommes de terre, des souches, du coton, de la pierre, des pasteques, des douves, et qu'on les emploie aussi pour le transport de lourdes chaudières et de machines.

Les charrettes américaines sont favorablement connues dans tous les pays étrangers, et les fabricants de charrettes font avec l'étranger un commerce très important et très avantageux. Cela est surtout vrai pour le Mexique, et il n'est que juste de dire que les charrettes expediées au Mexique et dans d'autres pays par la maison Fish Brothers Wagon Company, de Racine, Wisconsin, États-Unis de l'Amérique, ont donné toute satisfaction: grâce aux excellents résultats qu'elles ont produits, les ventes de cette maison ont augmenté dans de grandes proportions. Un joli catalogue, montrant les différents modèles de charrettes, les matières employées dans leur fabrication et leur solide construction, sera envoyé sur demande adressée à la compagnie.

Les américains visitant l'Europe ne peuvent arriver à comprendre pourquoi l'on persiste à se servir de lourds instruments aratoires nécessitant quatre chevaux d'attelage, alors qu'il existe des machines plus légères, coûtant moins cher et tout aussi solides, et qui font la même besogne avec un seul cheval de trait, ou deux au plus.

DAVID BRADLEY MANUFACTURING COMPANY.

Un des plus anciens établissements d'Amérique pour la fabrication des instruments agricoles est la maison David Bradley Manufacturing Company, de Bradley, Illinois. Dans les premiers temps de l'existence de Chicago, cette maison y a commencé les affaires dans un quartier qui est aujourd'hui entièrement couvert de maisons de commerce. Il y a quelques années, lorsqu'il est devenu nécessaire d'agrandir de nouveau l'usine, il s'est trouvé qu'il était impossible d'acquérir les immeubles attenants à un prix permettant de les occuper pour la fabrication. Alors la maison s'est transportée en dehors de la ville, à cinquante-quatre milles au sud de ce qui était autrefois North Kankakee. Le nom de la localité a été changé plus tard en celui de "Bradley," en l'honneur de l'établissement de la maison en cet endroit, l'acquisition d'une fabrique établie depuis si longtemps, avec ses centaines d'ouvriers, étant considérée comme un événement digne d'être rappelé de cette façon.

Cette maison fait de nombreuses espèces d'instruments agricoles; nous donnons le dessin de quelques-uns de ces instruments. Ses célèbres charrues à bras "Garden City Clipper" se fabriquent depuis plus d'un demi-siècle, et elles sont si bien faites qu'elles ont acquis la plus haute réputation. On s'en sert et on les aime dans beaucoup de pays à cause de leur forme correcte et de la très forte trempe donnée à leurs pièces de fatigue, ce qui assure la traction la plus faible possible et un long usage. Sa Poleza, représentée dans ce numéro, est une charrue à siège se prix moyen fabriquée entièrement en acier et en fer, ce qui lui donne de la force et de la légèreté. La barre de trait se rattache par des tiges aux roues d'arrière et de sillon, de sorte que ces roues sont toujours placées par la barre dans le sens de la traction; par conséquent, elles ne sont par sujettes à une tension latérale en tournant les coins ou ailleurs. Cette charrue à la base du "Garden City Clipper" dont il est question plus haut et durera pendant des années si l'on en prend bien soin.

La Presse à Foin toute en acier à double came, qui est également représentée, est une machine d'une puissance merveilleuse et très compacte. Elle peut être traînée par deux chevaux sur des routes ordinaires et, en cas de nécessité, un seul cheval peut la faire fonctionner, mais pour deux chevaux rien n'est plus aisé. La production moyenne de cette presse este de dix tonnes par jour. Elle presse le foin d'une façon tellement serrée qu'on peut mettre le poids complet dans un wagon ordinaire de marchandises. On peut l'employer aussi pour presser la paille, le crin, la paille de bois et autres articles volumineaux qu'on met souvent en balles. Cette presse se fait en trois dimensions avec compartiments à balle de 14 x 18 pouces, de 16 x 18 pouces, et de 17 x 22 pouces.

Le maison se fera un plaisir d'envoyer son catalogue à toute personne s'intéressant aux articles qu'elle fabrique, et de faire connaître ses prix et ses conditions. C'est une maison tout à fait digne de confiance, et elle prendra promptement en considération toutes les demandes qui lui seront adressées.

VANS MÉCHNIQUES POUR FERMES ET MAGASINS.

La maison Johnson & Field Manufacturing Company, de Racine, Wisconsin, États-Unis de l'Amérique, a exposé à l'Exposition de Paris quatre de ses vans mécaniques pour fermes et magasins, de sa marque bien connue "Racine" (voir le dessin à la page 46), qui étaient installés à l'entrée de la célèbre "Cuisine de Maïs." Cette maison est au nombre des plus grands fabricants de vans mécaniques du monde entier, et elle est bien connue pour ses nettoyeuses et ses séparateurs sans poussière pour grains et graines. Depuis plus de vingt ans elle se livre à la construction de machines pour nettoyer les grains, et sa longue expérience dans cette spécialité lui a donné des idées pratiques au sujet de ce qu'exige le commerce dans les nettoyeuses et séparateurs à grains et à graines, qui doivent réunir les points essentiels de durabilité, de grande efficacité et de perfection du travail accompli. Cette maison s'est toujours efforcée de tenir ses machines largement à la hauteur de la demande. Le grand commerce qu'elle fait actuellement atteste qu'elle y a réussi.

Le van mécanique "Racine" pour fermes est d'une efficacité grandement augmentée par rapport à toutes les autres machines pour le nettoyage de toutes sortes de grains et de graines. Il est d'une construction excessivement solide et durable, et l'appareil mécanique est tout entier placé à l'intérieur de la machine, hors du chemin. On le démonte toujours pour l'expédier, et il est facile de le remonter pour qu'il soit prêt à fonctionner. Les vans mécaniques "Racine" pour magasins sont construits sur le même principe que les vans mécaniques pour fermes, seulement on les fait plus grands, plus lourds et plus forts sous tous les rapports, et ils peuvent être mûs au moteur aussi bien qu'à la main. Les appareils de grandes dimensions ne peuvent être mues qu'au moteur, et ils sont particulièrement adaptées à l'emploi du manège.

Les nettoyeuses et séparateurs sans poussière "Racine," doubles et simples, pour grains et graines, font subir au grain ou à la graine une manipulation complète au moyen d'aspirateurs et de ventilateurs, et le font passer à travers plusieurs combinaisons de cribles et de tamis. Ces machines sont sans égales pour mettre les divers grains ou graines dans l'état voulu pour le commerce et la meunerie.

Les machines d'exportation de cette maison sont construites spécialement en vue de leur expédition, de sorte qu'on les emballe à plat dans des caisses. Pour le commerce du Mexique et de l'Amérique du Sud, la maison a construit une qualité de nettoyeuses avec une charpente extra forte et du fer pour mieux résister aux chaleurs intenses du climat.

Les vans mécaniques et les séparateurs "Racine" sont en usage dans presque tous les pays civilisés du globe, et ils sont construits expressément pour les pays étrangers et employés avec succès dans ces pays.

Ces machines sont très répandues et célèbres dans tous les pays étrangers où l'on fait pousser des grains, des graines, du café ou du riz, car elles possèdent des avantages qu'on ne trouve pas dans d'autres vans mécaniques.

La maison fabrique aussi des hache-paille mécaniques, des rouleaux pour la terre et des semoirs à la volée, pour l'exportation.

Les marchands qui ne connaissent pas ces machines et qui désirent savoir à quel degré de perfection le génie mécanique est arrivé en ce genre, devraient s'adresser à cette maison pour lui demander son catalogue illustré et descriptif. Les perfectionnements sont expliqués tout au long dans les pages du catalogue, et on peut comprendre tout de suite la simplicité et la perfection de l'opération. Le catalogue sera envoyé sur demande adressée à la Johnson & Field Manufacturing Company, Racine, Wisconsin, États-Unis de l'Amérique.

ADRIANCE, PLATT ET CIE.

Dès les premiers jours où ont été préparés les plans de la commission américaine à l'Exposition de 1900 à Paris, il a été évident que l'emplacement alloué aux Machines à Récolter, Classe 35, Groupe VII, serait complètement insuffisant pour une exposition représentant dignement les manufacturiers américains ; à la vérité, il est probable que deux seulement d'entre eux eussent été heureux d'occuper tout l'emplacement. Comment adapter une exposition satisfaisante à l'emplacement très limité qui était alloué est devenu un problème pour les manufacturiers, problème que, de l'avis général, la maison Adriance, Platt & Company, de Poughkeepsie, État de New York, a résolu de la façon la plus heureuse.

Le Grand Prix, la plus haute récompense accordée à un exposant de cette classe, qui a été décerné à la maison Adriance, Platt & Co., était certainement un honneur bien gagné et mérité, et il a continué la série non-interrompue de leurs victoires aux Expositions universelles précédentes. L'étalage remarquable de centaines de médailles d'or et d'autres médailles et trophées rappelait leurs victoires sur le terrain dans des épreuves faites dans toutes les parties du monde.

La maison Adriance, Platt & Co. est fière à bon droit de pouvoir dire que ses machines ont triomphé dans plus de premières épreuves officielles sur le terrain en Europe, pendant l'année 1900, que celles de n'importe quel autre fabricant.

En construisant des machines, cette maison s'est toujours particulièrement attachée à ce que les plans de ces machines fussent simples en même temps qu'exacts au point de vue mécanique, ne comprenant que des pièces dignes de confiance, susceptibles, lorsqu'elles sont usées, d'être arrangées et facilement remplacées par de nouvelles pièces, avec le déplacement des autres pièces réduit au minimum.

Parmi les machines en grandeur naturelle exposées à Paris, la Faucheuse Buckeye Adriance renferme les caractères essentiels présentés au public en 1858 par feu M. John P. Adriance, de cette maison, qui ont fait de la machine à faucher une innovation des plus réussies et qui lui ont valu sa première popularité auprès des agriculteurs. Les principes introduits dans cette machine se sont trouvés être vrais, et elle est devenue le modèle autour duquel beaucoup d'autres machines se sont groupées. Au Village Suisse dépendant de l'Exposition on a dû remarquer côte à côte une des Faucheuses "Buckeye Adriance" de 1858 et une autre construite en 1900, ce qui a fait voir de la façon la plus claire le maintien des principes originaux et les progrès réalisés dans la construction et le développement de détails de second ordre mais ayant leur utilité, le tout réuni formant la machine parfaite qui était exposée.

La seconde machine grandeur naturelle était la moissonneuse-lieuse "Adriance." Introduite sur le marché par la compagnie en 1888, elle a constitué un changement marqué par rapport à toutes les autres machines construites pour le même objet on l'a donnée comme plus légère, plus simple, plus compacte et plus portative, et comme accomplissant sa tâche avec beaucoup moins de dépense de force motrice, aussi bien en coupant qu'en manipulant et en livrant le grain.

Ce magnifique modèle de ce qui est connu dans le commerce comme le type à élévateur de la moissonneuse-lieuse est sans aucun doute le seul qui ait jamais été fabriqué sur une aussi petite échelle, et dans lequel chaque action mécanique, jusqu'au mécanisme lieur, est parfaite et peut remplir toutes ses fonctions.

Avec des bureaux dans la ville de New York, la maison Adriance, Platt & Co., a, de très bonne heure, porté son attention sur la possibilité d'un commerce d'exportation, qu'elle a bientôt entrepris et dont le développement l'a de bonne heure obligée à établir ses propres bureaux étrangers pour la plus grande facilité de ce commerce. En 1882, les ventes pour l'Europe ont été confiées a M. F. Mink, qui dirige le bureau à Paris, 159 quai Valmy, et à Hambourg, "Artushof." La maison Adriance, Platt & Co., fait également de grandes affaires aux États-Unis.

L'usine est située à une courte distance du grand port de New York, sur la rive orientale du magnifique fleuve Hudson, de sorte que, d'un côté, l'usine touche à un cours d'eau se jetant dans l'Océan, tandis que, de l'autre côte, elle s'étend jusqu'à la ligne du New York Central, la grande ligne à quatre voies du système colossal de chemins de fer d'Amérique, ce qui donne à la maison des facilités sans égales pour l'expédition de ses produits.

L'Amérique n'a pas tardé à reconnaître la valeur des services à attendre des moulins à vent, et cela dès les premières années de son merveilleux développement agricole ; des esprits ingénieux se sont vite rencontrés pour mettre le vent au travail. Une perfection quasi absolue a été atteinte dans l'emploi des moteurs à vent, et cruel serait l'embarras où se trouveraient aujourd'hui des milliers de cultivateurs américains s'ils étaient privés de cet auxiliaire toujours prêt à la besogne. Bien des fermiers d'Europe, bien des agriculteurs et des éleveurs de l'Amérique du Sud et d'ailleurs, trouveraient aide et profit à se servir d'un moulin à vent. Avant d'acheter, toutefois, il est bon de connaître les particularités des différents modèles. Il n'y a guère de limite aux services que ces appareils peuvent rendre, au travail qu'ils peuvent accomplir. Les publications parues aux États-Unis sur le sujet des moteurs aériens sont aussi intéressantes et amusantes qu'instructives. Les maisons d'agence et de représentation, établies en pays étranger, qui pourraient développer leur commerce dans cette branche, recevront toute l'assistance possible pour leur procurer les détails les plus complets.

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Tomo III. Filadelfia, Pa., E. U. del N. A. Diciembre de 1900. No.

El vapor "Helenes," que zarpó de Nueva York con rumbo á la Argentina, dias há, lleva entre su carga una importante cantidad de aperos agrícolas. La República Argentina tiene el primer puésto en este ramo, y luego siguen varios países sudamericanos. Los aperos norteamericanos se dan á conocer más y más cada día. Ellos no tienen rival ni en su duración, ni en la clase de servicios que prestan.

Los lectores del "Export Implement Age" tienen muchas responsabilidades en la actualidad, como consecuencia de las muchas oportunidades que les son presentadas, para conseguir aperos y maquinarias agrícolas en condiciones favorables. Los fabricantes norteamericanos tienen siempre el deseo de que sean conocidos los méritos y los precios de sus productos. El valor de algunos artículos ha sido reducido, y todos los comerciantes del exterior debieran dar pasos para conseguir pates á este respecto.

Las estadísticas de exportación de aperos norteamericanos, revelan que aunque la principal utilidad pertenece al fabricante, hay sin embargo, un ancho campo para que pueda hacer nogocio el hombre activo de Europa, de las Américas central y meridional y otros países pora la extensión de las ventas de aperos norteamericanos. Las ventajas que resultan del empleo de estas aperos se están dando á conocer y el número de agricultores que trabajan con economía de mano de obra va en aumento día por día.

Una de las primeras impresiones que recibian los visitantes á la Exposición de París, era el deseo de saber algo más respecto de los expositores ; de ahí que los que examinaban los artículos agrícolas exhibidos en la sección norteamericana, expresaban el deseo de saber algo más acerca de este pueblo que tales muestras daba de habilidad. Se efectuaron muchas ventas á agricultores europeos y ya han sido entregados los artículos. Si pues, nuestros amigos del exterior saben aprovechar estas circunstancias para dar á conocer las manufacturas americanas de aperos y las ventajas de fabricación y venta que presentan los artículos norteamericanos, es muy cierto que no puede esto sino redundar en muy buenos resultados para todos.

Uno de los futuros factores que ayudaran á los agentes vendedores de aperos, al introducir aperos, nuevos en un país extranjero, es la competencia—esto es, la competencia que se hacen entre sí los agricultores. Esto se hace patente principalmente en Alemania entre agricultores de remolacha azucarera, y el mismo espíritu de competencia no dejará de abarcar todos los ramos de la agricultura. El resultado es que el agricultor reconocerá inmediatamente la necesidad de poseer mejores aperos para estas necesidades especiales. La economía en la producción es el problema que está siempre presente, y lo que más contribuye para alcanzar ese resultado es el apero ó máquina más perfecto.

El "Star of England" que zarpó de Nueva York con rumbo á Australia hace poco, llevó por valor de $58,000 en artículos de ferretería, lo cual representa un buen cargamento de ferretería para un solo buque. Las más importantes casas importadora's de Melbourne y Sydney tienen sus agentes en los Estados Unidos, y compran por cantidades enormes. Esto es sugestivo, y debe tenerse en cuenta por los comerciantes de aperos de todos los países. Si ellos pudieran tener aquí un representante que sepa sus necesidades y lo que les conviene, mucho más rápidos serían los progresos que se harían en la introducción de aperos en el mundo entero. Centenares de comerciantes habria que venderían diez veces más aperos que los que venden ahora. Se requieren más directas relaciones y es fácil establecerlas. Son muchas las oportunidades excelentes para la venta de aperos norte americanos, que sepierden por falta de reclaciones directas entre el comerciante del extranjero y el fabricante norte americano. El "Export Implement Age" se propone disminuir esas dificultades.

Uno de las rémoras de esta época, que es preciso allanar, es la cuestión crédito. La inclinación de todo hombre de bién es pagar lo que compra. En las presentes condiciones, es imposible á muchos millares de personas comprar lo que necesitan. En Europa es poca la necesidad de crédito y en todos casos mucho menor que en las diversas partes del mundo, con excepción de los Estados Unidos, debiendo esta último país esta ventaja a sus muchos millones de industriales. En los demás países estorba al comercio el gran impedimento de tener que permitir al comprador que gane con el apero el costo que ha de pagar luego por él. Esta condición no es culpa de nadie, ni de ningún país, ni de ningún gobierno, ni es una condición que se pueda remediar inmediatamente ; el remedio no está en leyes, ni en ordenanzas ó decretos, ni en tratados, sino que debe ser la consecuencia del incremento del país y ello no se consigue sino por la lucha. Esta lucha se puede hacer más fácil usando lo que más ayuda al trabajador, es decir la máquina ó el apero más perfecto. Esta verdad está harto demostrada, y es sobre esta base que estriba la gran demanda que tienen los artículos de los mejores fabricantes de aperos norteamericanos.

Es difícil desarraigar los malos hábitos nacionales. Algunos comerciantes continentales, que tienen relaciones con Inglaterra, y son al mismo tiempo admiradores del ingenio norteamericano para la construcción de aperos, no se explican cómo los modelos y adelantos norteamericanos no son adoptados por sus competidores en el ramo de maquinarias agrícolas. Pues son varias las razones que obstan para que no lo hagan. Como lo apuntamos más arriba, son difíciles de desarraigar las costumbres nacionales. Las ideas que han sentado sus reales en un cerebro humano, no pueden ser extraídas con sólo demostrar que existe un sistema mejor. Por eso es que los agricultores que han menester de maquinarias agrícolas americanas, sólo las hallan en Norte América, y aquellos que deseen hoy comprar algo mejor que lo que les ha servido anteriormente, procederán con cordura enterándose bien de lo que se fabrica en ese ramo en los Estados Unidos. La historia del desarrollo de la industria, harto lo da á entender. El obstinado apego á las viejas rutinas y á los pesados aparatos, no se suele observar sino fuéra de los Estados Unidos.

La falta de estabilidad en los fletes marítimos ha sido una de las dificultades que han arredrado á nuestros amigos en otros países, al procurar introducir aperos norteamericanos en una escala más extensa. Los fletes han dependido hasta ahora de una cantidad de circunstancias que es natural que influyan en ellos, pero que son un grave inconveniente para las transacciones comerciales. Este obstáculo ha sido bastante serio, en especial cuando se trataba de competir con algún fabricante de aperos de otro país, donde son fijos y conocidos los precios de los fletes, y se podían tener en cuenta al calcular el costo de un apero pedido por un parroquiano. Este serio obstáculo, poco á poco irá desapareciendo, por el establecimiento de líneas regulares de vapores entre los puertos norteamericanos y los del extranjero, como existen ya algunas entre New York y ciertos otros puertos. La regularidad en el precio de los fletes es una gran necesidad que se está actualmente procurando remediar ; por manera, que no tardará en ser cosa fácil para un comerciante en aperos del centro de Europa, poder informar al parroquiano que le haya encargado un apero, cuándo lo podrá entregar, y darse á sí mismo cuenta del monto de la utilidad que de él derivará.

Los mercados europeos han empezado, en una fecha comparativamente reciente, á ser centros activos en la acción de proveer á las crecientes necesidades del pueblo. Los comerciantes y fabricantes de fuéra, se preguntan cuánto tiempo durará eso, al paso que la economía política, que ha llegado á constituir parte del incremento norteamericano, nos garantiza el porvenir. La gran actividad industrial de Alemania, y las creces que está tomando la industria en Italia, Francia y España, deben y pueden aumentar contantemente todos los años. Esto ha ocurrido en los Estados Unidos con algunas interrupciones ocasionales, y las demandas de Europa que actualmente son abastecidas, no tienen prácticamente límites. Hay un refrán en los Estados Unidos que dice que la producción puede aumentar hasta que todos los hombres, mujeres y niños tengan comida buena y substancial, una habitación cómoda, y suficiente ropa de buena calidad, amén de una pequeña reserva en efectivo. Esta es la meta de las aspiraciones norteamericanas, y no es otra que la aspiración de todo hombre civilizado. A la realización de este ideal, nos conducen nuestra educación y nuestros progresos, y es un resultado ó condición que podremos alcanzar. Este ideal es perfectamente licito, porque es una condición á qué cada ser humano debe tender. El sirve de impulso para trabajar más y mejor, y para que nos apartemos del marasmo y entremos en condiciones de vida más benéficas.

VANS MÉCHNIQUES POUR FERMES ET MAGASINS.

La maison Johnson & Field Manufacturing Company, de Racine, Wisconsin, États-Unis de l'Amérique, a exposé à l'Exposition de Paris quatre de ses vans mécaniques pour fermes et magasins, de sa marque bien connue "Racine" (voir le dessin à la page 46), qui étaient installés à l'entrée de la célèbre "Cuisine de Maïs." Cette maison est au nombre des plus grands fabricants de vans mécaniques du monde entier, et elle est bien connue pour ses nettoyeuses et ses séparateurs sans poussière pour grains et graines. Depuis plus de vingt ans elle se livre à la construction de machines pour nettoyer les grains, et sa longue expérience dans cette spécialité lui a donné des idées pratiques au sujet de ce qu'exige le commerce dans les nettoyeuses et séparateurs à grains et à graines, qui doivent réunir les points essentiels de durabilité, de grande efficacité et de perfection du travail accompli. Cette maison s'est toujours efforcée de tenir ses machines largement à la hauteur de la demande. Le grand commerce qu'elle fait actuellement atteste qu'elle y a réussi.

Le van mécanique "Racine" pour fermes est d'une efficacité grandement augmentée par rapport à toutes les autres machines pour le nettoyage de toutes sortes de grains et de graines. Il est d'une construction excessivement solide et durable, et l' appareil mécanique est tout entier placé à l'intérieur de la machine, hors du chemin. On le démonte toujours pour l'expédier, et il est facile de le remonter pour qu'il soit prêt à fonctionner. Les vans mécaniques "Racine" pour magasins sont construits sur le même principe que les vans mécaniques pour fermes, seulement on les fait plus grands, plus lourds et plus forts sous tous les rapports, et ils peuvent être mûs au moteur aussi bien qu'à la main. Les appareils de grandes dimensions ne peuvent être mues qu'au moteur, et ils sont particulièrement adaptées à l'emploi du manège.

Les nettoyeuses et séparateurs sans poussière "Racine," doubles et simples, pour grains et graines, font subir au grain ou à la graine une manipulation complète au moyen d'aspirateurs et de ventilateurs, et le font passer à travers plusieurs combinaisons de cribles et de tamis. Ces machines sont sans égales pour mettre les divers grains ou graines dans l'état voulu pour le commerce et la meunerie.

Les machines d'exportation de cette maison sont construites spécialement en vue de leur expédition, de sorte qu'on les emballe à plat dans des caisses. Pour le commerce du Mexique et de l'Amérique du Sud, la maison a construit une qualité de nettoyeuses avec une charpente extra forte et du fer pour mieux résister aux chaleurs intenses du climat.

Les vans mécaniques et les séparateurs "Racine" sont en usage dans presque tous les pays civilisés du globe, et ils sont construits expressément pour les pays étrangers et employés avec succès dans ces pays.

Ces machines sont très répandues et célèbres dans tous les pays étrangers où l'on fait pousser des grains, des graines, du café ou du riz, car elles possèdent des avantages qu'on ne trouve pas dans d'autres vans mécaniques.

La maison fabrique aussi des hache-paille mécaniques, des rouleaux pour la terre et des semoirs à la volée, pour l'exportation.

Les marchands qui ne connaissent pas ces machines et qui désirent savoir à quel degré de perfection le génie mécanique est arrivé en ce genre, devraient s'adresser à cette maison pour lui demander son catalogue illustré et descriptif. Les perfectionnements sont expliqués tout au long dans les pages du catalogue, et on peut comprendre tout de suite la simplicité et la perfection de l'opération. Le catalogue sera envoyé sur demande adressée à la Johnson & Field Manufacturing Company, Racine, Wisconsin, États-Unis de l'Amérique.

ADRIANCE, PLATT ET CIE.

Dès les premiers jours où ont été préparés les plans de la commission américaine à l'Exposition de 1900 à Paris, il a été évident que l'emplacement alloué aux Machines à Récolter, Classe 35, Groupe VII, serait complètement insuffisant pour une exposition représentant dignement les manufacturiers américains; à la vérité, il est probable que deux seulement d'entre eux eussent été heureux d'occuper tout l'emplacement. Comment adapter une exposition satisfaisante à l'emplacement très limité qui était alloué est devenu un problème pour les manufacturiers, problème que, de l'avis général, la maison Adriance, Platt & Company, de Poughkeepsie, État de New York, a résolu de la façon la plus heureuse.

Le Grand Prix, la plus haute récompense accordée à un exposant de cette classe, qui a été décerné à la maison Adriance, Platt & Co., était certainement un honneur bien gagné et mérité, et il a continué la série non-interrompue de leurs victoires aux Expositions universelles précédentes. L'étalage remarquable de centaines de médailles d'or et d'autres médailles et trophées rappelait leurs victoires sur le terrain dans des épreuves faites dans toutes les parties du monde.

La maison Adriance, Platt & Co. est fière à bon droit de pouvoir dire que ses machines ont triomphé dans plus de premières épreuves officielles sur le terrain en Europe, pendant l'année 1900, que celles de n'importe quel autre fabricant.

En construisant des machines, cette maison s'est toujours particulièrement attachée à ce que les plans de ces machines fussent simples en même temps qu'exacts au point de vue mécanique, ne comprenant que des pièces dignes de confiance, susceptibles, lorsqu'elles sont usées, d'être arrangées et facilement remplacées par de nouvelles pièces, avec le déplacement des autres pièces réduit au minimum.

Parmi les machines en grandeur naturelle exposées à Paris, la Faucheuse Buckeye Adriance renferme les caractères essentiels présentés au public en 1858 par feu M. John P. Adriance, de cette maison, qui ont fait de la machine à faucher une innovation des plus réussies et qui lui ont valu sa première popularité auprès des agriculteurs. Les principes introduits dans cette machine se sont trouvés être vrais, et elle est devenue le modèle autour duquel beaucoup d'autres machines se sont groupées. Au Village Suisse dépendant de l'Exposition on a dû remarquer côte à côte une des Faucheuses "Buckeye Adriance" de 1858 et une autre construite en 1900, ce qui a fait voir de la façon la plus claire le maintien des principes originaux et les progrès réalisés dans la construction et le développement de détails de second ordre mais ayant leur utilité, le tout réuni formant la machine parfaite qui était exposée.

La seconde machine grandeur naturelle était la moissonneuse-lieuse "Adriance." Introduite sur le marché par la compagnie en 1888, elle a constitué un changement marqué par rapport à toutes les autres machines construites pour le même objet on l'a donnée comme plus légère, plus simple, plus compacte et plus portative, et comme accomplissant sa tâche avec beaucoup moins de dépense de force motrice, aussi bien en coupant qu'en manipulant et en livrant le grain.

Ce magnifique modèle de ce qui est connu dans le commerce comme le type à élévateur de la moissonneuse-lieuse est sans aucun doute le seul qui ait jamais été fabriqué sur une aussi petite échelle, et dans lequel chaque action mécanique, jusqu'au mécanisme lieur, est parfaite et peut remplir toutes ses fonctions.

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Uno de los futuros factores que ayudaran á los agentes vendedores de aperos, al introducir aperos, nuevos en un país extranjero, es la competencia—esto es, la competencia que se hacen entre sí los agricultores. Esto se hace patente principalmente en Alemania entre agricultores de remolacha azucarera, y el mismo espíritu de competencia no dejará de abarcar todos los ramos de la agricultura. El resultado es que el agricultor reconocerá inmediatamente la necesidad de poseer mejores aperos para estas necesidades especiales. La economía en la producción es el problema que está siempre presente, y lo que más contribuye para alcanzar ese resultado es el apero ó máquina más perfecto.

El "Star of England" que zarpó de Nueva York con rumbo á Australia hace poco, llevó por valor de $58,000 en artículos de ferretería, lo cual representa un buen cargamento de ferretería para un solo buque. Las más importantes casas importadora's de Melbourne y Sydney tienen sus agentes en los Estados Unidos, y compran por cantidades enormes. Esto es sugestivo, y debe tenerse en cuenta por los comerciantes de aperos de todos los países. Si ellos pudieran tener aquí un representante que sepa sus necesidades y lo que les conviene, mucho más rápidos serían los progresos que se harían en la introducción de aperos en el mundo entero. Centenares de comerciantes habria que venderían diez veces más aperos que los que venden ahora. Se requieren más directas relaciones y es fácil establecerlas. Son muchas las oportunidades excelentes para la venta de aperos norte americanos, que se pierden por falta de reclaciones directas entre el comerciante del extranjero y el fabricante norte americano. El "Export Implement Age" se propone disminuir esas dificultades.

Uno de las rémoras de esta época, que es preciso allanar, es la cuestión crédito. La inclinación de todo hombre de bién es pagar lo que compra. En las presentes condiciones, es imposible á muchos millares de personas comprar lo que necesitan. En Europa es poca la necesidad de crédito y en todos casos mucho menor que en las diversas partes del mundo, con excepción de los Estados Unidos, debiendo esta último país esta ventaja a sus muchos millones de industriales. En los demás países estorba al comercio el gran impedimento de tener que permitir al comprador que gane con el apero el costo que ha de pagar luego por él. Esta condición no es culpa de nadie, ni de ningún país, ni de ningún gobierno, ni es una condición que se pueda remediar inmediatamente; el remedio no está en leyes, ni en ordenanzas ó decretos, ni en tratados, sino que debe ser la consecuencia del incremento del país y ello no se consigue sino por la lucha. Esta lucha se puede hacer más fácil usando lo que más ayuda al trabajador, es decir la máquina ó el apero más perfecto. Esta verdad está harto demostrada, y es sobre esta base que estriba la gran demanda que tienen los artículos de los mejores fabricantes de aperos norteamericanos.

Es difícil desarraigar los malos hábitos nacionales. Algunos comerciantes continentales, que tienen relaciones con Inglaterra, y son al mismo tiempo admiradores del ingenio norteamericano para la construcción de aperos, no se explican cómo los modelos y adelantos norteamericanos no son adoptados por sus competidores en el ramo de maquinarias agrícolas. Pues son varias las razones que obstan para que no lo hagan. Como lo apuntamos más arriba, son difíciles de desarraigar las costumbres nacionales. Las ideas que han sentado sus reales en un cerebro humano, no pueden ser extraídas con sólo demostrar que existe un sistema mejor. Por eso es que los agricultores que han menester de maquinarias agrícolas americanas, sólo las hallan en Norte América, y aquellos que deseen hoy comprar algo mejor que lo que les ha servido anteriormente, procederán con cordura enterándose bien de lo que se fabrica en ese ramo en los Estados Unidos. La historia del desarrollo de la industria, harto lo da á entender. El obstinado apego á las viejas rutinas y á los pesados aparatos, no se suele observar sino fuéra de los Estados Unidos.

La falta de estabilidad en los fletes marítimos ha sido una de las dificultades que han arredrado á nuestros amigos en otros países, al procurar introducir aperos norteamericanos en una escala más extensa. Los fletes han dependido hasta ahora de una cantidad de circunstancias que es natural que influyan en ellos, pero que son un grave inconveniente para las transacciones comerciales. Este obstáculo ha sido bastante serio, en especial cuando se trataba de competir con algún fabricante de aperos de otro país, donde son fijos y conocidos los precios de los fletes, y se podían tener en cuenta al calcular el costo de un apero pedido por un parroquiano. Este serio obstáculo, poco á poco irá desapareciendo, por el establecimiento de líneas regulares de vapores entre los puertos norteamericanos y los del extranjero, como existen ya algunas entre New York y ciertos otros puertos. La regularidad en el precio de los fletes es una gran necesidad que se está actualmente procurando remediar; por manera, que no tardará en ser cosa fácil para un comerciante en aperos del centro de Europa, poder informar al parroquiano que le haya encargado un apero, cuándo lo podrá entregar, y darse á sí mismo cuenta del monto de la utilidad que de él derivará.

Los mercados europeos han empezado, en una fecha comparativamente reciente, á ser centros activos en la acción de proveer á las crecientes necesidades del pueblo. Los comerciantes y fabricantes de fuéra, se preguntan cuánto tiempo durará eso, al paso que la economía política, que ha llegado á constituir parte del incremento norteamericano, nos garantiza el porvenir. La gran actividad industrial de Alemania, y las creces que está tomando la industria en Italia, Francia y España, deben y pueden aumentar contantemente todos los años. Esto ha ocurrido en los Estados Unidos con algunas interrupciones ocasionales, y las demandas de Europa que actualmente son abastecidas, no tienen prácticamente límites. Hay un refrán en los Estados Unidos que dice que la producción puede aumentar hasta que todos los hombres, mujeres y niños tengan comida buena y substancial, una habitación cómoda, y suficiente ropa de buena calidad, amén de una pequeña reserva en efectivo. Esta es la meta de las aspiraciones norteamericanas, y no es otra que la aspiración de todo hombre civilizado. A la realización de este ideal, nos conducen nuestra educación y nuestros progresos, y es un resultado ó condición que podremos alcanzar. Este ideal es perfectamente lícito, porque es una condición á qué cada ser humano debe tender. El sirve de impulso para trabajar más y mejor, y para que nos apartemos del marasmo y entremos en condiciones de vida más benéficas.

INTENTIONAL SECOND EXPOSURE

Con excepción de la molienda del trigo, no debiera el agricultor en nada ocupar al molinero, porque las moledoras de granos ó molinos de pasto, tales como se fabrican en la actualidad en los Estados Unidos, muelen toda clase de granos muy fina y rapidamente.

En los Estados Unidos se alimenta todo el ganado con maíz y avena. El maíz empero se usa más bien para la gente con preferencia á la avena ó al centeno. En cuanto al trigo, no sólo se consume en grandes cantidades, sino que se exporta á todos los países del mundo.

Les americanos al pasar por Europa no pueden comprender por qué se usa allí un pesado apero que necesita de cuatro caballos, cuando bien se puede usar un apero ligero que cuesta menos, tiene tanta fuerza y sólo requiere el empleo de uno ó dos caballos.

La América del Sur vende muchos de sus productos en los Estados Unidos, y los comerciantes de las Repúblicas hispano americanas hallarían muchas ventajas en usar aperos norteamericanos, puesto que se les pueden hacer como los necesiten para su servicio especial.

Los dueños de lecherías en los Estados Unidos contribuyen ellos mismos á la construcción de sus mantequilleras, y de éstas las hay que manipulan la leche de un millar de vacas. La separadora de crema es un artículo indispensable para el lechero americano y debiera adoptarse en todos los países donde se explotan lecherías.

Los agentes europeos para las rebanadoras americanas de manzanas, encomian muchísimo los servicios que estos aparatos están prestando á los pasteleros dueños de hoteles y todas las demás personas que los han usado. Llamamos la atención de los agentes europeos hacia la productiva venta de este útil y vendible aparato.

Acaso se haya dedicado mayor tiempo al estudio del arado americano de hierro restriado, que á ningún otro apero, y el resultado es que hoy sus excelentes condiciones son conocidas en casi todos los países del mundo. Sus puntos sobresalientes saltan á la vista, y los importadores europeos de maquinarias agrícolas norteamericanas, no se pueden equivocar cuando compran un arado norteamericano de hierro resfriado.

Los comerciantes de otros países que compran mercancias paro sus parroquianos saben perfectamente que cuando uno de éstos halla un artículó que le conviene, no vacila en participarselo á sus vecinos; y en caso de no ser comunicativo, no dejarán empero sus vecinos de advertir que su apero es distinto de los que usan la generalidad de ellos, y si dicho apero tiene reales méritos, no tardará en haber demanda de él, y de lo contrario, no tardarán en manifestarse sus defectos. Los fabricantes norteamericanos que buscan negocio lo hacen con las miras de establecer un negocio permanente; por manera que los comerciantes y vendedores de aperos extranjeros que venden artículos agrícolas, manufacturados en Norte America, pueden abrigar la confianza que no les seran enviados sino aquellos aperos que satisfagan completamente á los parroquianos que los han de usar.

Si un apero que cueste cierta cantidad se introduce en una explotación agrícola y que la producción de dicha empresa se aumente en grandes proporciones, se deduce que la ganancia ha sido mayor para le comprador que para el fabricante. Por esta razón, debieran todos los agricultores proveer sus quintas de aperos que aumenten sus utilidades, sin tener en mientes de qué país vienen dichos aperos. Para salir avante tiene todo agricultor que considerar su propio interés, y todos los comerciantes que abastecen á los agricultores deberán apartar las preocupaciones y el favoritismo, y comprar en el país que fabrique los mejores aperos. Es esto, para los negocios, un hecho que no se puede descuidar. Los aperos americanos se usan en todos los países, y la demanda aumenta año por año.

La industria de arados de los Estados Unidos ha tomado proporciones extraordinarias. Bien que un arado se parezca á otro arado, vale sin embargo la pena de enterarse de las condiciones de los primeros productos del mercado en materia de arados; para ello léanse los datos que publica este periódico á ese respecto. La fama de nuestros arados en el exterior ha sido bien ganada y no es por tanto efímera. No existen requisitos en la agricultura del extranjero que no se puedan llenar exactamente como se han llenado los requisitos de nuestra propia labranza. Las facilidades de nuestros talleres son completas, y además la experiencia de nuestros fabricantes supera todas las dificultades. Los agentes europeos tendrán por parte nuestra todas las facilidades que les podamos suministrar para que se familiaricen con los arados norteamericanos, entre los cuales está comprendido el ramo de arados múltiples.

Actualmente hay en los Estados Unidos dos tendencias contrarias, que notarán todos los comerciantes de allende los mares. La primera es la tendencia á subir los precios de los artículos por causa del aumento del precio de los salarios por una parte, y por otra, el aumento en la demanda del interior; la otra tendencia contraria á ésta, es la que procura rebajar los precios, con el objeto de aumentar la utilidad, por el aumentando las ventas. Los comerciantes en aperos pueden notar hasta qué punto estas dos tendencias contrarias afectan sus intereses. La primera consecuencia es la de obligar á los comerciantes que tienen posibilidad de hacerlo, á defenderse, fabricando mejores aperos, empleando mejor madera y acero de mejor temple, y mejorando la calidad en cada uno de sus detalles. El resultado de estas dos fuerza, es suministrar al comprador mejor calidad, pero no quena sino muy poca margen para una disminucion en los precios. Los próximos seis meses van á proporcionar oportunidades excepcionalmente favorables para los compradores.

TREN CARGADO CON MAQUINARIAS AMERICANAS.

De otra de las grandes empresas americanas, manufactureras de maquinarias agrícolas, no hace mucho que salió un tren completamente cargado con sus productos. Dicho tren partió de las fábricas de Port Huron, Michigan, dirijido á una agencia de distribución situada en Wichita, Kansas. La referida empresa es la "Port Huron Engine and Thresher Co.," Port Huron, Michigan.

El tren que hemos mencionado comprendía veintiseis wagones enteramente cargados con maquinarias. También había un carro de pasajeros para los conductores del tren y para los representantes de la casa. Todas las máquinas contenidas en dicho tren estaban ya vendidas antes de salir de la fábrica. Fuera de ésto, se había despachado anticipadamente cierto número de wagones llenos de maquinarias que habían sido encargadas con urgencia y cuyos dueños no podían, por lo tanto, esperar el despacho del tren. Además, después de despachado el tren, siguieron varios wagones más, llenos de máquinas que no se habían concluido aún en el momento de la salida del dicho tren.

El último carro de maquinarias que contenía el tren, estaba cargado con un motor mixto compuesto de una máquina de quince caballos y un gran dinamo eléctrico. Este motor estaba calentado durante todo el viaje, por manera que suministró en todo su curso silbidos hasta más no querer, puso en movimiento el dinamo durante la noche, surtió de luz eléctrica todo el tren y también suministró una poderosa proyección que se situó en la cima de una separadora. Banderas y pendones adornaban profusamente el convoy. Llamaba la atención por do quiera que pasaba, este tren de progreso y civilización.

Por la noche donde quiera que pasaba, congregábanse los vecinos para gozar de los espectáculos gratuitos con que se les regalaba, los cuales consistían en vistas estereoscópicas, vistas movedizas y cantos. Novedades de anuncio eran distribuidas en cada estación. Se ofrecieron premios para los aficionados que sacarán las mejores fotografías del tren entre el punto de salida y el de llegada. Posteriormente publicaremos una hermosa fotografía de dicho tren. No es extraño, con tantos atractivos, que los vecinos acogieran la llegada del referido tren con aclamaciones en cada estación.

La mencionada progresista empresa empezó sus negocios en 1890 con su actual razón social y directorio. Es muy conocida como especialista en la fabricación de maquinarias agrícolas con motor de vapor y sus accesoríos. Ella fabrica máquinas trilladoras, desgranadoras de maiz, molinos aserradores, maquinaria para caminos, moledoras de pasto, un nuevo estilo de wagones, tanques para agua y otros productos similares. Es la intención de la Compañía seguir añadiendo nuevos artículos á los que actualmente fabrica, hasta llegar á hacer toda clase de instrumentos agrícolas con motor de vapor. Las maquinarias más adecuadas para trabajar con motores portadores ó de tracción, incluyendo las máquinas para hacer caminos y los carros para ser tirados por motores de tracción. La casa garantiza sus modelos, su material, su mano de obra, sus pesos y dimensiones.

El "1900 Book of Specifications," tal es el título del cátalogo de la Compañia "Port Huron Engine and Thresher Co.," cuya dirección es Port Huron, Michigan. Escribasele pidiéndoselo, pues ella es exportadora.

ADRIANCE, PLATT & CO.

Desde que se empezaron á preparar los planes de la comisión norteamericana para la Exposición de Paris, se hizo evidente que el espacio destinado para las maquinarias segadoras (Clase 35, Grupo VII), iba á ser completamente insuficiente para la cabal representación de los fabricantes norteamericanos; y la verdad es que acaso dos de éstos bien habrían podido ocupar sólos todo el espacio. Por manera que fué un problema harto difícil de resolver, la cuestion de hacer en tan limitado espacio, una exhibición satisfactoria. Este problema fué sin embargo resuelto por uno de los expositores Adriance, Platt & Co., de Poughkeepsie, N. Y., con bastante lucimiento, según opinión general. El Gran Prix ó sea la más alta recompensa otorgada en cada clase, lo obtuvo la casa de Adriance, Platt & Co., y no hay duda que ha sido una honra bien merecida. Con ella continúa la serie de triunfos alcanzados por dicha Sociedad en las demás exposiciones internacionales, que han precedido. Su, importante collección de medallas y trofeos recuerdan sus triunfos en concursos agrícolas, en todos los países del mundo. La sociedad Adriance, Platt & Co., proclamacon satisfación que sus máquinas han obtenido en el año de 1900, más recompenasas en concursos agrícolas en países de primer orden de Europa, que ningún otro fabricante.

En la construccion de sus máquinas, esta Sociedad ha procurado que los planes fueran sencillos, así como tambièn correctos en cuanto á tecnicismo mecánico, no adoptando sino sistemas recomendables, diferentes piezas se puedan facilmente sustituir al estar gastadas, sin la menor perturbación posible de las otras piezas.

Entre las máquinas de tamaño natural exhibidas, la dalladora "Adriance Buckeye" contiene todas las piezas esenciales de la máquina inventada en 1858 por Mr. John P. Adriance, de dicha Compañía, y cuyas condiciones fueron tales que se le consideró como una mejora importantísima y por ese motivo tuvo muy entusiasta acogida entre los agricultores. Los principios y mejoras introducidos en después la máquina, resultaron acertados y por ese motivo se le consideró como un modelo que ha sido imitado á porfía por muchas otras maquinas. En la aldea suiza anexa á la Exposición, se pudo ver una de las dalladoras "Adriance Buckeye" del año de 1858 y tambien una de las fabricadas en 1900, lo cual ponía claramente de manifiesto lo permanente de los principios originales y el adelanto en la construcción y desarrollo de piezas útiles de menor importancia, que componen la máquina perfecta allí exhibida.

La segunda máquina de tamaño natural exhibida, fué la hacinadora Adriance. Fué, fabricada por la Compañía en el año de 1888, y marca desde entonces una notable diferencia con respecto á las demás máquinas construidas con el mismo fin: es más liviana, más sencilla, más compacta y portátil y trabaja con mucho menos gasto de fuerza, tanto cuando pica como cuando hacina y entrega el grano.

Tan hermoso modelo de lo que se conoce como el tipo más elevado de hacinadora es sin duda el único que se ha fabricado en tan pequeña escala y en el cual cada operación, hasta el mismo mecanismo que ata, es perfecto y desempeña muy bien sus funciones.

Adriance, Platt & Co., han tenido desde sus principios su oficina en Nueva York, para poder dedicar especialmente su atención á las necesidades de la exportación, y los primeros pedidos del extranjero que despacharon, gustaron tánto, que desde entonces establecieron una oficina especial para atender con más esmero á los pedidos del extranjero. En 1882 pusieron la agencia de venta para Europa á cargo de Mr. F. Minck, quién dirije en París la oficina situada en el Quai Valmy No. 159, y otra en Hamburgo que lleva el nombre de "Artushof." Adriance, Platt & Co., tienen también una gran salida para sus màquinas en los Estados Unidos.

Las fábricas estan situadas á poca distancia del gran puerto de Nueva York en la margen oriental del magnifico río Hudson, con lo cual tienen á un lado de sus edificios una arteria fluvial de las mayores del mundo, y al otro lado se extienden hasta el paso del Ferrocarril Central de Nueva York, gran vía de cuatro líneas, la principal entre las que comprende el colosal sistema ferrocarrilero de los Estados Unidos; esto le proporciona á la Compañía todas las facilidades de transporte.

EDIFICIO DE FABRICACION DE LA McSHERRY MANUFACTURING COMPANY.

En esta entrega, en la página 58, verán nuestros lectores un grabado que representa la McSherry Manufacturing Company, en Middleton, Ohio, que es una de las fabricas más importantes del mundo. Las sembradoras fabricadas por esta Compañía y sus antecesores, son so conocidas muy favorablemente en el mercado de aperos así como por los agricultores de los Estados Unidos y los del extranjero, donde quiera que se cultiva el trigo. Las primeras sembradores McSherry fueron manufacturadas en Indianopolis, Ind., Estados Unidos de Norte América, en 1858, y en 1862 la ciudad de Dayton, Ohio, Estados Unidos de Norte América, indujo al dueño de la patente y fundador de la casa á establecer sus fábricas en aquella ciudad, y en ella se fabricaron las sembradoras McSherry por espacio de treinta y dos años. En 1893, encontrándose muy estrecho el espacio ocupado por las fábricas, y en la imposibilidad de poder adquirir terrenos adyacentes para complementarlas, se construyeron los actuales edificios en Middletown, Ohio, Estados Unidos de Norte América, donde se fabrican actualmente sus afamados artículos.

La sembradora McSherry ha recibido la más alta recompensa en muchas de los Exposiciones efectuadas en los Estados Unidos, tales como la Trans-Mississippi Exposition, verificada en Omaha, Neb., Estados Unidos de Norte América, en 1898, en donde mereció la más alta recompensa y una medalla de oro, en competencia con muchas máquinas de la misma clase; y desde entonces empezó á aumentar su venta en términos tales que en la actualidad se venden millares anualmente, habiendo aumentado en grandes proporciones las ventas para el extranjero, así como las del interior.

Ha sido siempre el empeño de los fabricantes de las sembradoras de granos McSherry, no fabricar sino máquinas estrictamente de primera clase, no empleando sino el mejor material que se pueda conseguir en el mercado trabajado por mecánicas de perfecta competencia en sus respectivos departamentos. En esta entrega se verá un grabado de una de estas sembradoras.

EL CARRO MODERNO.

Los Estados Unidos están en primera fila con respecto á los demás países, en la manufactura de aperos, maquinarias y herramientas agrícolas y enseres para quintas. Esto se puede decir aún con más razón de la fabricación de carros y coches. No hay país que haya realizado semejantes progresos en la hechura de vehículos de recreo y vehículos pesados para el transporte de maquinarias, de productos agrícolas y de flete, en general.

El término medio del peso garantido que pueden llevar los carros norteamericanas es de 1500 kilógramos. Y se debe tener en cuenta que el peso que cargan algunos de ellos, excede en mucho esta cantidad. A veces llevan, sin sufrir, un pesa hasta de diez mil kilógramos.

Una de las fábricas de carros más principales y prominentes de este país, tiene su establecimiento en Racine, Wis. Es la Fish Bros. Wagon Company, que fabrica el único carro original y legítimo de la marca Fish Bros. A la atención de estos Señores debemos el poder insertar los grabados referentes á este artículo, publicados en la página 40-42. Dicha Compañía ha venido fabricando carretas por espacio de un cuarto de siglo, en Racine, Wis. Grandes adelantos han sido introducidos en la fabricación todos los años, y á esta fecha constituye una de las manufacturas de carretas más modernas en cada uno de sus pormenores.

Los grabados contienen fotografías tomados en todas las comarcas de este país desde el Pacífico hasta el Atlántico, y la gran variedad de cosas que cargan los carros ponen de manifiesto al mismo tiempo que la variedad de productos del país, todas las aplicaciones que tiene cada uno de estos carros.

Es de sumo interés saber que carros de idéntica construcción pueden á la vez servir para acarrear madera, carbón, ripias, heno, trigo, patatas ó papas, leña, algodón, piedra, sandías, duelas de barril, y llevar también pesadas calderas y maquinarias.

Los carros norteamericanos son favorablemente conocidos en todos los países, y sus fabricantes disfrutan de una gran demanda del exterior. México principalmente importa gran cantidad de estos carros y se puede decir que los que envía á México y otros países la Fish Bros. Wagon Company, de Racine, Wis., Estados Unidos de Norte América, han dado completa satisfacción á sus compradores, lo cual ha contribuido en gran manera á aumentar las ventas de esta Compañía. Un hermoso catálogo que representa las diferentes clases de carros, los materiales empleados en su construcción y su poderosa armazón, será enviado á todo persona que lo pida á la Compañía.

Existe una clase de maquinarias en que sobresalen con especialidad los fabricantes norteamericanos. Estas son las limpiadoras de trigo y de cebada, las separadoras, las aventadoras, las desgranadoras de maiz, las limpiadoras de café, y las escogedoras y separadoras de café, las limpiadoras de granos y de semillas, y las trilladoras. Diremos á nuestros amigos de Europa, Australia y Sur América que si nuestras columnas de anuncios, con la asistencia de los informes que hallarán en los catálogos, no bastaren para guiarlos y ayudarlos á comprar con acierto, nos será muy grato complementar esos informes privadamente. Las manufacturas americanas en estos ramos son de especial mérito y los nuevos molinos merecen llamar la atención de los comerciantes que deseen complacer mejor á sus parroquianos.

AVENTADORAS PARA GRANJAS Y ALMACENES.

La casa Johnson & Field Mfg. Co., de Racine, Wis., Estados Unidos de Norte América, exhibió en la Exposicion de París, cuatro de sus bien conocidas aventadoras para granjas y almacenes, marca "Racine" (véase el grabado en la página 46) las cuáles estaban situadas á la entrada de la célebre cocina de maíz. Esta compañía figura entre las más importantes manufactureras de aventadoras del mundo, y es muy conocida por sus limpiadoras y separadoras de granos y semillas. Hace más de veinte años que esta Sociedad se ocupa de la fabricación de maquinarias para la limpieza de granos, y su larga experiencia en este ramo especial, le ha suministrado los datos necesarios y las ideas prácticas requeridos por el comercio de limpiadoras y separadoras de granos y de semillas, que exije puntos esenciales de duración, gran capacidad, y trabajo bien hecho, saliendo por lo tanto avante en el propósito de que sus máquinas permanezcan siempre dignas de la gran demanda que de ellas recibe. Este éxito lo atestigua el gran comercio que se hace de estas máquinas.

La aventadora marca "Racine" tiene un alcance de trabajo mucho mayor que otros aparatos de esta clase, en la limpieza de toda clase de granos y semillas. Su estructura es excesivamente poderosa y duradera y todo el engranaje está situado en el interior del molino, donde no estorba. Se desarma siempre para el embalaje y se vuelve á armar con suma facilidad. Las aventadoras "Racine" para almacenes están hechas por el mismo principio que las aventadoras para granjas, con la diferencia que son mucho más grandes, más dobles y resistentes bajo todos respectos, y se pueden accionar por fuerza motriz así como por brazos. Las de gran tamaño, requieren fuerza motriz, y se adaptan especialmente donde se usa fuerza motriz producida por caballos.

Las limpiadoras de polvo y basuras y separadoras de granos y semillas dobles y sencillas, marca "Racine" sujetan el grano ó la semilla á una esmerada manipulación por aventadoras de succión y soplido, haciéndolos pasar por varias combinaciones de tamices y cribas. No existe maquinaria más adecuada para poner las distintas clases de granos y semillas en las condiciones que requieren el mercado ó el molino.

Las máquinas para la exportación, que fabrica la Compañía, son especialmente construidas para ser expedidas, de suerte que se desarman en piezas cómodas para el embalaje. Para Méjico y Sud América construye la Compañía un surtido de limpiadores, de armazón muy doble fortalecida con hierro para resistir mejor los grandes calores de aquellos climas.

Las aventadoras y separadoras de granos "Racine" son conocidas y usadas en casi todos los países civilizados del mundo y son expresamente fabricadas para ser usadas en países extranjeros, donde dan muy buenos resultados.

Estas máquinas son muy apreciadas en todos los países extranjeros donde se cultivan granos, café y arroz, porque éllas reunen condiciones de suma ventaja que no tienen otras aventadoras.

También fabrica esta Compañía máquinas para separar el hollejo, rodillos agírcolas, y sembradoras al vuelo para la exportación.

Los comerciantes que no conozcan estas máquinas y deseen darse cuenta del grado de perfección á que ha llegado el ingenio mecánico en estos ramos, deberán dirijirse á la Compañia pidiéndole su catálogo ilustrado y descriptivo. Las mejoras recientes están bien explicadas en las páginas del catálogo, y es muy fácil entender la sencillez y el esmero con que se hacen las operaciones. Escríbase pues á la Johnson & Field Mfg. Co., Racine, Wis., Estados Unidos de Norte América.

DAVID BRADLEY MANUFACTURING CO.

Uno de los más antiguos establecimientos de Norte Améríca para la fabricación de aperos agrícolas es la David Bradley Manufacturing Co., de Bradley, Ill. Empezó dicha Compañía muchos años há en Chicago, en un sitio que en la actualidad está cubierto de edificios destinados al comercio. Hace algunos años, cuando fué necesario un ensanche en los edificios de fabricación de esta Compañía, se hizo imposible adquirir terrenos adyacentes á un precio accesible para edificios de fabricación de aperos, y por ese motivo vióse obligada la Compañía á mudar su establecimiento á cincuenta y cuatro millas al Sur, á lo que se llamó ántes North Kankakee, cuyo nombre ha sido sustituido por el actual de "Bradley," en honor del establecimiento de la Compañía porque el haberse establecido en ese lugar una fábrica tan antigua é importante, con sus centenares de obreros, se consideró como un acontecimiento digno de conmemoración.

Fabrica varias especies de aperos, algunos de los cuales figuran en los grabados que publicamos. Sus bien conocidos arados "Garden City Clipper," que se vienen haciendo desde hace más de cincuenta años, son tan perfectos gue ellos han dado á la Compañía una reputación de primer orden. Están en uso en muchos países donde se les aprecia por sus formas correctas y por el fortísimo temple que reciben sus piezas que más trabajan, reuniendo las condiciones de extremada ligereza en el tiro y larga duración. El "Poleza," cuyo grabado insertamos, es un arado con asiento de mediano precio, completamente hecho de acero y hierro, lo cual lo hace fuerte y liviano. La abrazadera del tiro está conectada por varas con la rueda tracera y la de surco, para que dichas ruedas estén siempre fijas a la abrazadera y rueden en la misma línea que el tiro, no dando por lo tanto lugar á ningún esfuerzo lateral al dar la vuelta en las esquinas ú otros sitios. También tiene este apero el fondo de la "Garden City Clipper" arriba mencionadas y su duración seráde muchos años, si se trata con esmero.

La prensa para heno completamenta de acero, cuyo grabado también publicamos, es una maravillosa y poderosa maquina á la par que muy compacta. Ella puede ser tirada por dos caballos en caminos ordinarios y puede ser puesta en moción por un solo caballo, aunque para dos caballos es preferible. Su producción mediana es de diez toneladas por día. Ella comprime hasta tal punto el heno, que las carretas ordinarias pueden ser cargadas llevando toda su carga compléta. Se puede también usar para prensar paja, crin, excelsior y otros artículos abultados, que es costumbre enfardelar. Se hacen tres tamaños de pacas 14 x 18, 16 x 18, y pulgadas 17 x 22.

Esta Compañía se complacerá en enviar su catálogo á todas las persoñas interesadas en los artículos que ella fabrica y les dira sus precios y condiciones. La Compañía es muy respetable y atenderá debidamente á todas las preguntas que se le dirijan.

COMO SE FABRICA LA CERCA DE ALAMBRE ENROSCADO.

La cuestión cercas es una de las más importantes para los agricultores y propietarios, en toda le extension de la tierras. En la página 52 insertamos la ilustracion de la clase de cercas manufacturadas por la casa Keystone Woven Wire Fence Co., de Peoria, Ill.

Los barrotes superior é inferior están compuestos de dos alambres número dece, torcidos para formar uno solo. Los barrotes intermedios, asi como los puntales traviesos, están hechos con alambre del mismo tamaño, cuyo diámetro verdadero está representado en la fig. 1.

Como se notará en la figura 2, el barrote travesando ó puntal, se enrosca primero con ambos alambres en el barrote superior, luego baja pasando ă través de todos los barrotes inmediatos, enroscándose con cada uno de éstos en los puntos de intersección. Luego se enrosca con ambos alambres en el barrote inferior por espacio de 30 centímetros, subiendo luego á unirse con los barrotes intermedios por el mismo sistema, enroscándose de nuevo con ambos alambres en el barrote superior como 30 centímetros, y bajando luego como ántes se dijo.

Como el alambre de puntal es continuo y retorcido sobre los cables de uno á otro puntal, resulta la cerca completamente lisa a evita toda ocasión de que el puntal se desprenda de los barrotes horizontales.

Los alambres de puntal estan enroscados en los barrotes horizontales en los puntos de intersección, estableciendo así la más perfecta conexión, y haciendo imposible apartar el alambre de puntal de su sitio. Bajo este respecto, es la Keystone, superior á todas las cercas en las cuales el puntal no está sino arrollado en torno de los barrotes horizontales, haciendo posible que los puntales resbalen de su sitio, lo cual no sólo anula la utilidad de la cerca, sino que además le hace perder su buena apariencia.

La construcción de las cercas Keystone las hace inmejorables y superiores á todas, para cercas de cerdos, de ganado vacuno, lanar y caballar, y en general para todos los usos del campo y necesidades del ganado. Esta cerca se puede facilmente arrollar en reducido espacio, haciéndose muy portátil. Es lisa á la par que fuerte, y por lo tanto, ni arranca la lana de los carneros, ni en manera alguna mutila el ganado.

Las cercas Keystone no sufren por el calor ó el frío. Como se verá en la fig. 6, las roscas están sesgadas, siendo esa su posición natural. Cuando por causa del frío, empiecen los alambres horizontales á acortarse, la longitud suplementaria les será suministrada por las roscas las cuales se estiran un tanto y resultan más en la forma que se ve en la fig. 5. La diferencia en la forma de las mallas esta algo exagerada, para demostrar mejor el principio.

En la fig. 7, las líneas sólidas muestran la posición natural de las rosca, las líneas de puntos indican la posición de la misma rosca, contraída por el frío. La rosca vuelve siempre á su posicion natural tan luego como lo permite la tensión de los barrotes horizontales.

Esta misma Compañía fabrica también un hermoso surtido de puertas ornamentales para granjas, y cercas ornamentales para praderas de césped. Para conseguir catálogos y precios, ocúrrase á la casa Keystone Woven Wire Fence Co., Peoria, Illinois, E. U. de N. A.

McCORMICK McCORMICK McCORMICK McCORMICK McCORMICK McCORMICK McCORMICK

The Name McCormick!

THE NAME McCORMICK!

What does it *mean?* It means the point of departure for humanity from an age that is forever past — the age of the sickle. It means the gradual evolution of a great industry from the unit of one mind — the thinker, inventor, creator — to a gigantic organization that gives employment to twenty-five thousand men and lightens the toil of millions.

THE NAME McCORMICK! Wonderful, miraculous in its ever-gathering strength! First made known to the world as an agent of progress by a trial seventy years ago in the golden harvest fields of Virginia; then astonishing the British at the first great World's Exposition in London in 1851, and winning in succession the highest awards of every world's exposition for half a century.

THE NAME McCORMICK! Shining with ever-glowing and effulgent lustre, shining all the more because of the incessant detraction which accompanies success.

THE NAME McCORMICK! It is emblazoned on the flag of human progress in colors that neither time nor the hand of man can efface.

THE NAME McCORMICK! It is heard in the rustle of illimitable wheat fields; in the click of the mower and the whirr of the binder. It is seen on the newly invented harvesting machine that is gallantly entering the vast expanse of corn-fields throughout the world, an invention which successfully harvests and binds the giant crop of America; on a marvelous husker and shredder that doubles the value of every acre of this giant crop.

THE NAME McCORMICK! What does it mean? It means the first labor-saving machine used in the field. It means the most advanced and progressive machines of TODAY. It means the highest standard of excellence. It means sound and honest materials. It means brilliance of mechanical design. It means your money's worth — and more.

THE NAME McCORMICK! What quantities of machines have borne this name in seventy years of successful harvests!

THE NAME McCORMICK! Familiar on the banks of the Mississippi and the Hudson; near the silvery Thames; under castle walls where the flag of Britain has waved for a thousand years; on the champaigns of France; on that famous wheat-field in Belgium where Wellington's levies met the Old Guard; under the sunny skies of Italy where Hannibal led his dusky army against the legions of old Rome; in Germany and the far Northland, the cradle of warlike races that have overrun the world; on the boundless grey steppes of Russia; on the broad pampas of Argentine; in Southern Africa, and in the young and progressive states of the far Antipodes.

The name McCormick signifies SUCCESS. Success to the DEALER, success to the FARMER.

McCORMICK McCORMICK McCORMICK McCORMICK McCORMICK McCORMICK McCORMICK

FORTY-NINE YEARS DEVELOPMENT

of THE IMMMENSE PLANT of

WALTER A. WOOD MOWING & REAPING MACHINE COMPANY

HOOSICK FALLS, N. Y., U. S. A.

From a Total Production of 500 Machines in One Year

Its Capacity has increased to Several Hundred more than that number

As a.... Daily Production in **1900**

To Meet the Ever Increasing Demand for Their Incomparable

MOWERS
REAPERS
BINDERS
OVER
2,000,000 Machines

HAY RAKES
and
TEDDERS
Made and Sold.
Catalogue
MAILED ON APPLICATION
Mention this paper.

Walter A. Wood Mowing & Reaping Machine Company

The Walter A. Wood
MOWING and REAPING MACHINE CO.

has received the following recognition at the various French International Expositions:

PARIS EXPOSITION of 1867: Grand Prix (Highest Award); Cross of Chevalier of the Legion of Honor.

PARIS EXPOSITION of 1878: Grand Prix, also Special Award of an Object of Art, and Cross of Officer of the Legion of Honor.

PARIS EXPOSITION of 1889: Grand Prix and Special Award of an object of Art.

PARIS EXPOSITION of 1900: Grand Prix, with the additional distinction of having its Reaper selected as the type of a modern agricultural implement for the great painting by Albert Maignan, representing Agriculture in the Salle des Fetes. The Wood Reaper was placed at the disposal of the famous artist at his special request, that it might be copied in every detail for this great work, which has been admired by the countless thousands who visited the Exposition.

* * *

The awarding of the Grand Prix at the Paris Exposition this year is but one step in a long series of over 1,400 Grand Prizes, Gold Medals, Diplomas, Awards and Honors of every description which have been given to the machine made by this company.

* * *

Here is a list of the prizes won by Wood machines at various field trials and agricultural exhibitions held at different parts of Europe during the past season:

At trials held by the Agricultural Union on the 25th and 26th of July, Zurawica, our Reaper received the first prize (a silver medal).

At Mower field trials held June 18th, 19th and 20th, Hasselt, Belgium, our Mower received the first prize.

At Dollbergen, in Germany, in July, our Mower and Reaper were awarded the first prize (a gold medal).

At Philippeville, in Belgium, on the 12th of August, our Light Reaper was awarded first prize, and also our Mower was awarded first prize.

At Northampton Show, England, on July 14th, the only award (a silver medal) was awarded our Harvester and Binder, for general excellence over all competitors.

At Newport (Salop), in July, our Harvesters and Binders were on exhibition and received the first prize (gold medal) of the Newport and District Agricutural Society.

At the Stafford Show, in England, July 24th, our company was awarded the only award, for Improved Binder, over all competitors.

At Canterbury Show, in England, our Binder again received the highest award (silver medal).

At Brighton Show, England, our Binder again received the highest award (a silver medal).

At Machnyleth, in Wales, on August 22d, our Binder received the highest and only award.

At Oswestry, September 20th, our Binder again received the first prize.

SUCH A COMPARISON IS INVITED BY

The WALTER A. WOOD MOWING and REAPING MACHINE COMPANY

HOOSICK FALLS, N. Y., U. S. A.

FARM AND WAREHOUSE FANNING MILLS.

The Johnson & Field Mfg. Co., of Racine, Wis., U. S. A., exhibited at the Paris Exposition four of their well-known make of "Racine" farm and warehouse fanning mills (as illustrated on this page), which were displayed at the entrance of the celebrated "Maize Kitchen." They are among the largest manufacturers of fanning mills in the world, and are well known for their dustless grain and seed cleaners and separators. For more than twenty years they have been engaged in the building of grain cleaning machinery, and their long experience in this special line has given them practical ideas of the requirements of the trade for grain and seed cleaners and separators, which embody the essential points of durability, large capacity and thorough work, and it has always been their endeavor to keep their machines fully abreast of the demand. How well they have succeeded, their present large trade attests.

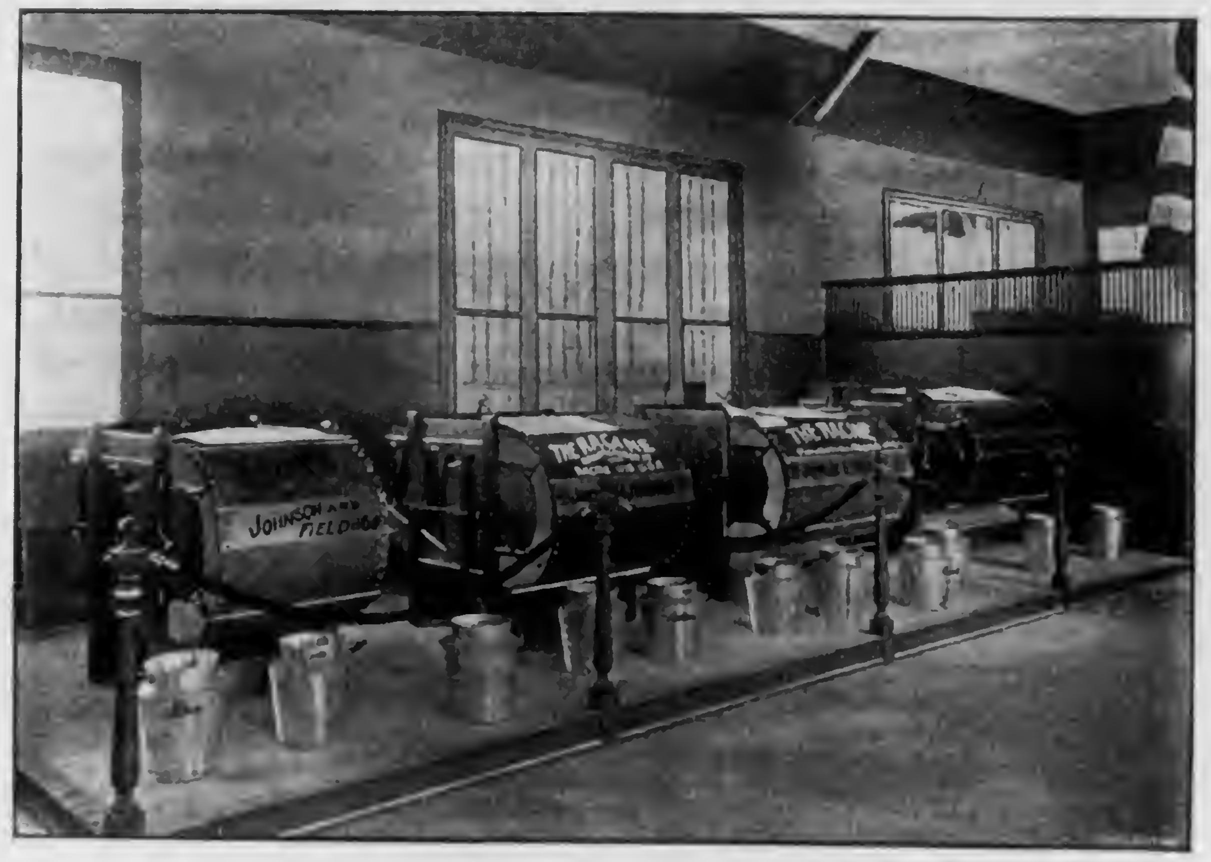


Exhibit at the Paris Exposition.
Apparells exposés, Paris Exposition.
Máquinas exhibidas, Paris Exposition.
Ausgestellte Apparate, Paris Exposition.
Johnson & Field Mfg. Co., Racine, Wis., U. S. A.

The "Racine" farm fanning mill has a largely increased capacity over all other mills in cleaning all kinds of grain and seeds. In its construction it is exceedingly powerful and durable, and the gearing is all placed on the inside of the mill, out of the way. It is always knocked down for shipment and is easily set up again ready for operation. The "Racine" warehouse mills are constructed on the same principle as the farm mills, only made much larger, heavier and stronger in every way, and can be run by power as well as by hand. The large sizes can be run only by power, and are especially adapted where horse power is used.

The "Racine" double and single dustless grain and seed cleaners and separators subject the grain or seeds to a thorough manipulation by suction and blast fans, and pass them through several combinations of sieves and screens. For bringing the various grains and seeds into proper condition for commercial and milling purposes, they are unexcelled.

The company's export machines are especially constructed for shipping purposes, so that they are packed flat for boxing. For Mexican and South American trade they have built a line of cleaners of extra heavy frame work and iron to better endure the intense heat of that climate.

The "Racine" fanning mills and separators are in use in nearly every civilized country on the globe, and are built expressly for and used with entire success in foreign lands.

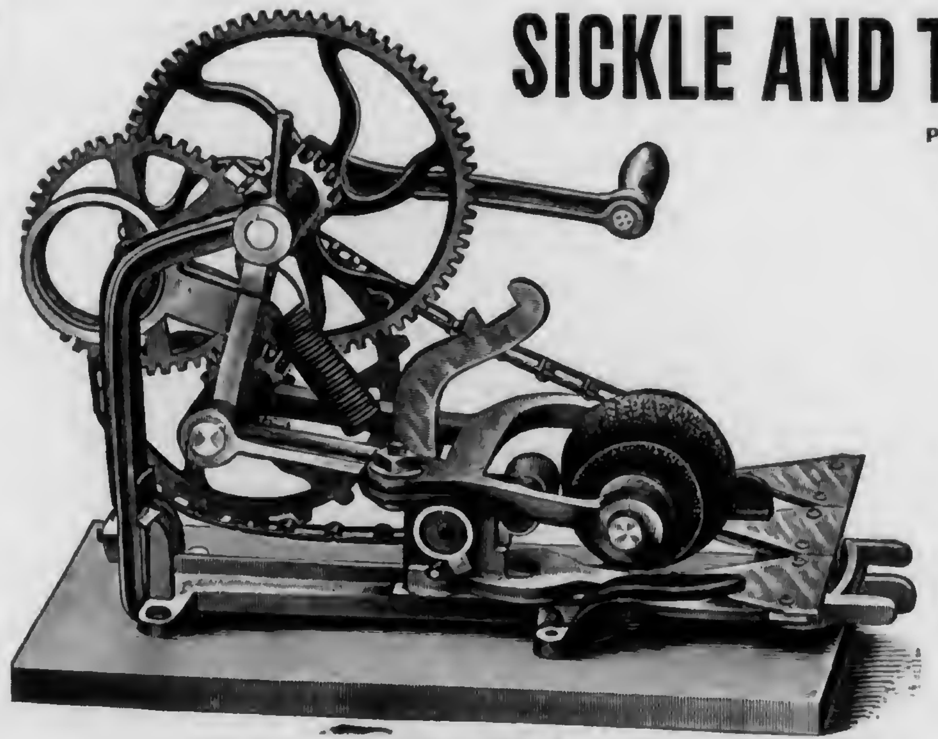
These machines are widely celebrated in all foreign countries where they raise grain seeds, coffee or rice, as they possess advantageous features not to be found in other fanning mills.

The company also manufacture chaffing, machines, land rollers, and broadcast seeders for the export trade.

Dealers who are not acquainted with these machines, and who desire to know the degree of perfection which mechanical ingenuity has attained in these lines, should write to the company for their illustrated and descriptive catalogue. The improved features are fully explained in the pages of the catalogue, and the simplicity and thoroughness of operation can be readily understood. The catalogue will be sent upon application to the Johnson & Field Mfg. Co., Racine, Wis., U. S. A.

THE WESTERN SICKLE AND TOOL GRINDER.

Patented October 23, 1900.



PERFECTLY AUTOMATIC.

Can be changed from an automatic to hand regulating in a moment.

GRINDS SICKLES PERFECTLY

from heel to point and from end to end

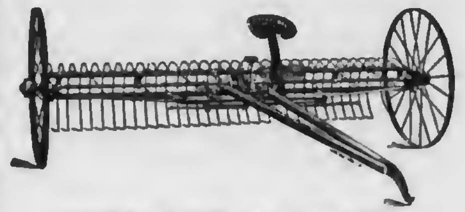
USES THE BEST EMERY WHEELS MADE IN AMERICA.

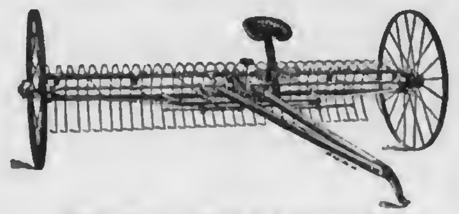
NEEDS NO SKILLED MECHANIC.

CAN BE OPERATED BY ANYBODY.

MANUFACTURED BY

Western Implement Co., Port Washington, Wis., U. S. A.


HODGES LASSIE Self-Dump Rake.


HODGES LASSIE Self-Dump Rake.

ACME

If you are seeking a mower which embodies everything that is newest and best in mower construction; which is simple, direct and powerful; which will cut close to the ground, mowing perfectly light and heavy or up and down grass; which has high wheels, thus affording perfect traction and light draft, you should look into the merits of the

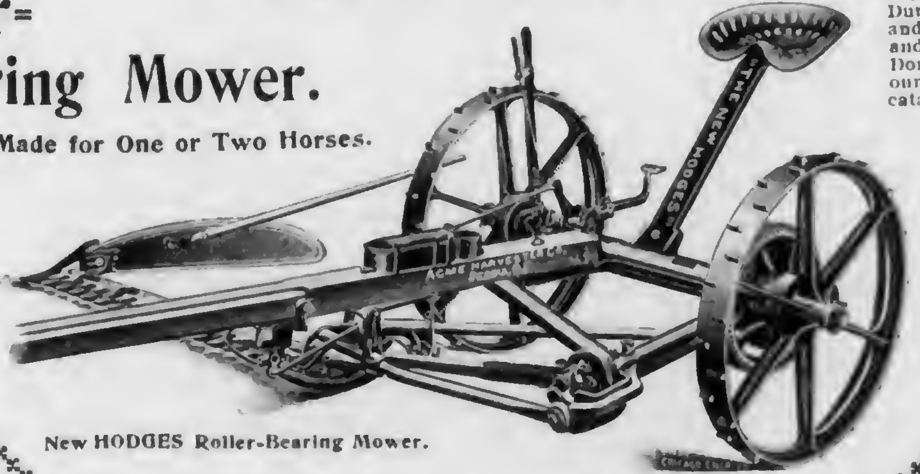
HODGES "PONY" Roller-Bearing Mower.

It has our new **Broad-Faced Close-Meshed Concealed Gear; Direct Right-angle Long-Stroke Pitman Compound Spring-Foot Lever for Lifting the Cutter Bar.** This acts instantly and easily, and does away entirely with the old hand lever. The only hand lever on this machine is used for tilting the cutter bar. Provided with serrated ledger plates—**Doubles the Cutting Capacity and the Life of the Guard.** These are but a few of the many superior points of this mower. Above all it is **Lightest in Draft and Free from Side Draft.** Made in six sizes, to cut 3½, 4, 4¼, 4½, 5 and 6 feet. We also manufacture the famous Hodges Headers, Harvester King Header and Binder, Hodges Queen Binder, Hodges "Laddie" and "Lassie" Hand and Self-Dump Rakes, Monarch and Acme Sweep Rakes, and Acme Stackers. Don't buy until you get our new illustrated catalogue.

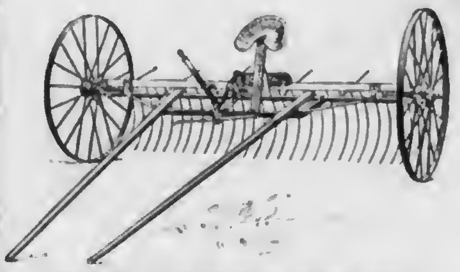
Send for It, It's Free.

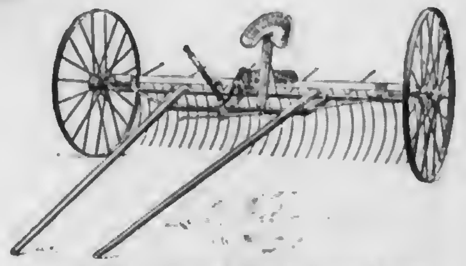
New Hodges Roller-Bearing Mower.

Made for One or Two Horses.


New HODGES Roller-Bearing Mower.

"The Highest Attainable Point of Excellence."

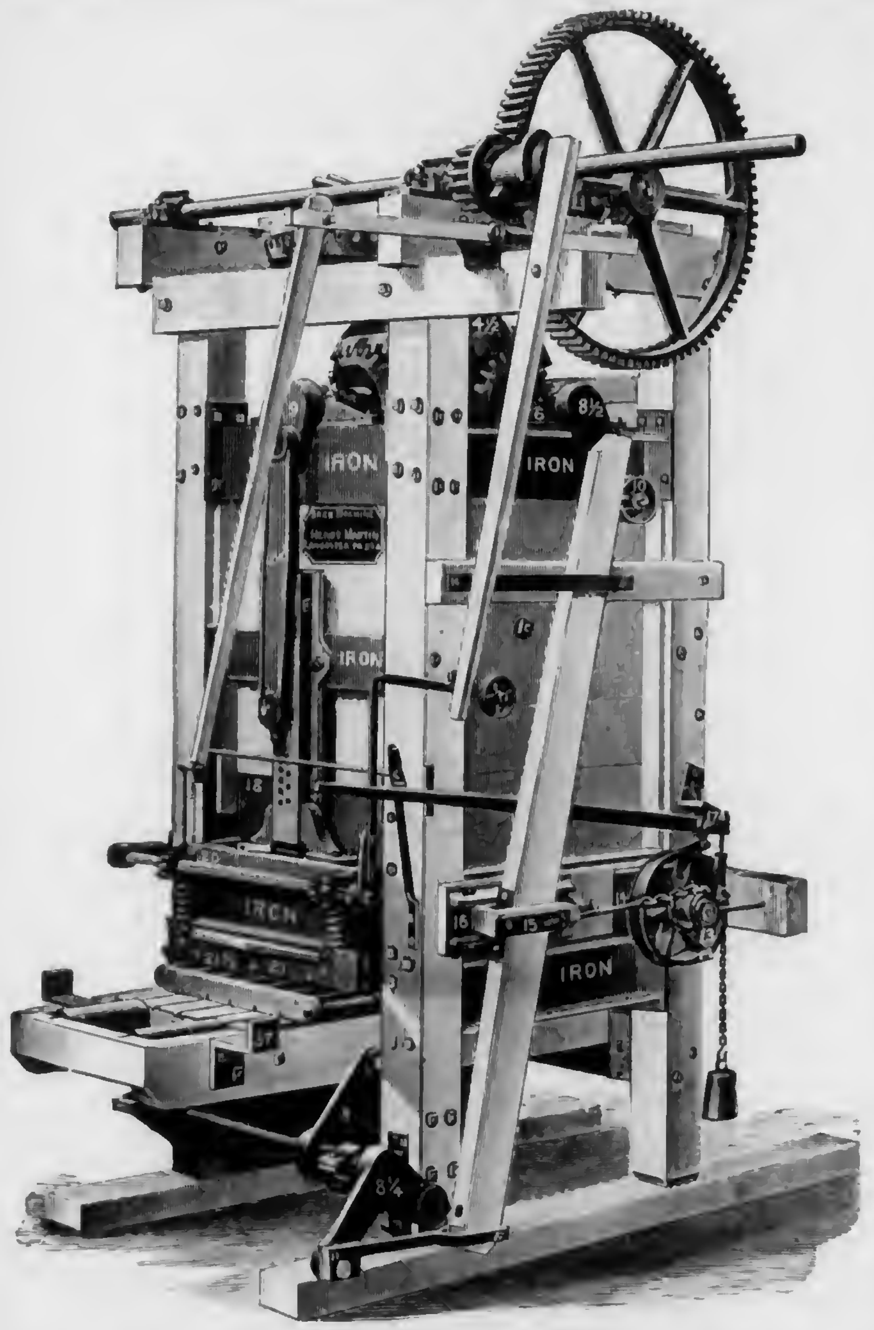

HODGES LADDIE Hand-Dump Rake.


HODGES LADDIE Hand-Dump Rake.

Acme Harvester Co.

Peoria, Illinois, U. S. A. B-17 Produce Exchange, New York City.

THE MARTIN BRICK MACHINE.



We illustrate, in connection with this article, two machines which have found an extensive sale both at home and abroad. The upper cut is a facsimile of the latest improved machine for the manufacture of building brick, designed by the Henry Martin Brick Machine Manufacturing Co., of Lancaster, Pa. This company, by its president, Mr. Henry Martin, have been actively engaged in the manufacture of brick and the building of brick machinery for nearly fifty years, and to-day present to the world a machine that is unequalled for simplicity, durability and output of work.

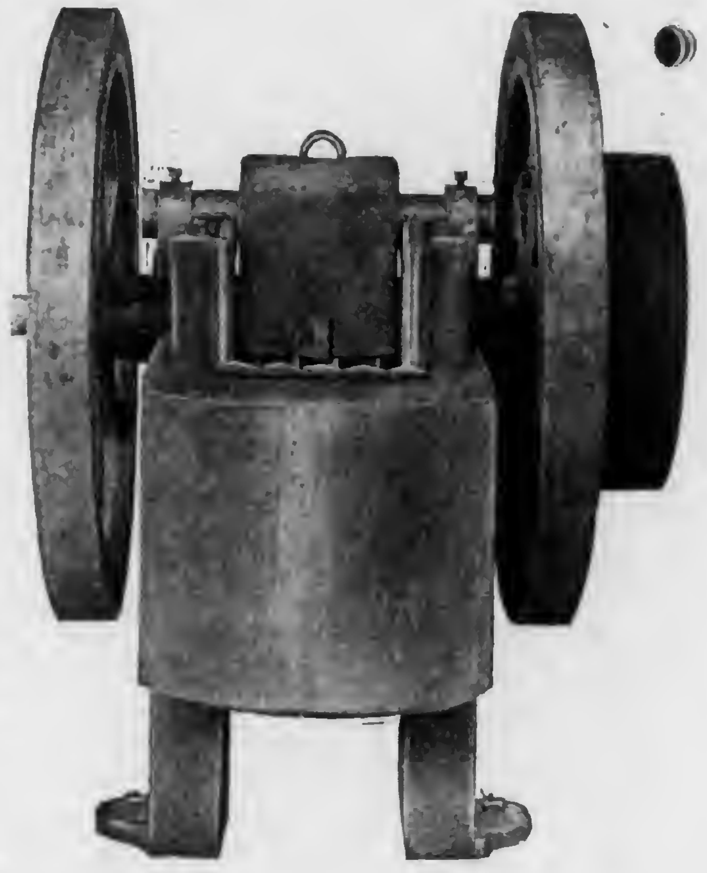
The illustration herewith shows one of their style "B" machines, which has been so extensively adopted throughout the United States and Canada, there having been over 3,000 placed in practical operation, and wherever used have been the means of making further sales. As referred to above, these machines are very simple in their construction, which recommends them to the foreign brickmaker. They do not require skilled or even intelligent labor to operate them, and will make any number of different sizes of bick, tile, etc.

Each machine is constructed by expert workmen, and each stage of the building is carefully and personally supervised by the general manager of the company, Mr. Wm. R. Martin, and a guarantee accompanies each machine.

Every machine shipped from the works of the Martin Co. is set up and thoroughly tested before shipment, and each part carefully marked so that any ordinary mechanic can put it together again from the illustrations and instructions that are furnished.

With each shipment plans are furnished free of all cost, showing the arrangement of all the machinery on the yard as well as plans for the erection of drying racks, kilns, etc., if the latter are desired, which enables any one to complete a brick-making plant at the least possible cost.

While the illustration referred to shows a machine for the manufacture of brick by the soft-mud sand-faced process, this company is prepared to furnish the very latest improved wire-cut auger machinery, and also dry-press machines, dry or wet pans, and in fact everything a brickmaker needs, which is their motto.



The lower illustration shown herewith is of a rock and ore crusher. This useful machine is not confined to use about a brick yard, but in mines, quarries or wherever there is any hard rock or stone to be reduced. It is constructed like the brick machine for strength and durability and to turn out a full day's work. The bed of this crusher is cast in one solid piece, doing away with all loose or bolted joints which are so liable to work loose and throw the shafts out of line, and which nearly always means a serious breakdown and consequently expense for repairs. Then, too, all other parts of the crusher are well proportioned and very heavy, the flywheels being amply large to ease running the machine when working the hardest.

The company informs us that they build several different sizes of these crushers, as well as other styles, adapted for pulverizing different materials, and as they publish a complete catalogue of the goods they manufacture we advise our friends to send for full information, which will be cheerfully furnished.

Double Tube Lightning Insect Exterminator and Sprayer

with Detachable Glass Reservoir.

A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy, and it does save time.

Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.

It is light, but well made; is cheap; and repairs, if needed, obtained in the smallest village.

Packed in cases of one dozen for foreign trade.

Circulars and prices ree upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

Fly=Killer Oil.

Protects Cows and Horses from torture by flies.

IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.

It is entirely harmless, and does not injure the coat of either cows or horses, and **it will keep flies from stock during the summer months.**

To be applied with a sprayer, but works best with our Double Tube Lightning Insect Exterminator and Sprayer.

Put up in one-gallon cans, one dozen cans to a box, for foreign trade. Circulars and prices free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

King OF THE Potato Field.

In Use in Potato Districts All Over the World.

A DIGGER THAT DIGS

Most simple in construction, yet combining every essential principle to make a successful machine. Reasonable in price and within the reach of the smallest and poorer farmer. Full and complete description, with prices, will be sent free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

Im Wettbetrieb mit zwölf anderen Mähern auf dem grössten 266,000 Acker umfassenden Grundbesitze in den Vereinigten Staaten gewann der "Jones" Kettenglied-Mäher den Ehrenplatz für leichte Zugkraft und vollkommene Arbeit.—*R. M. Pogson, Tejon Rancho's, Cal.*

LEICHT ARBEITENDE

PLANO

BINDEMASCHINEN
MÄHMASCHINEN
ERNTEMASCHINEN
KÖPFER
HEURECHEN
SICHELSCHLEIFER

Die einfachsten und vollständigsten Erntemaschinen der Welt.	GRÖSSTER ERFOLG 1899	Tausende von scharfsichtigen Geschäftsleuten haben in der Saison 1898-99 durch Einführung der "PLANO" Maschinen ihr Absatzgebiet verdoppelt und verdreifacht. Verdoppeln Sie das Ihrige im Jahre 1900.

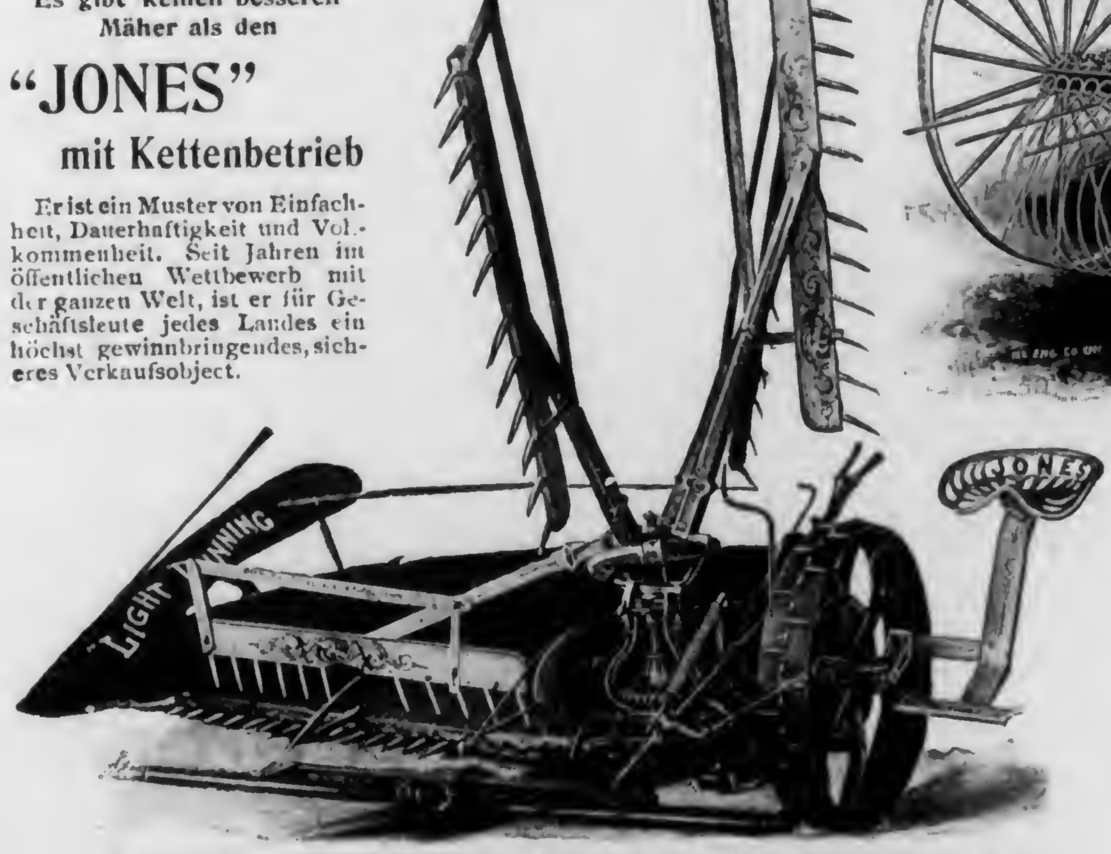
Der "Jones" Hebel Selbstbinder ist anerkanntermassen ein Triumph unseres Zeitalters

Es gibt keinen besseren Mäher als den

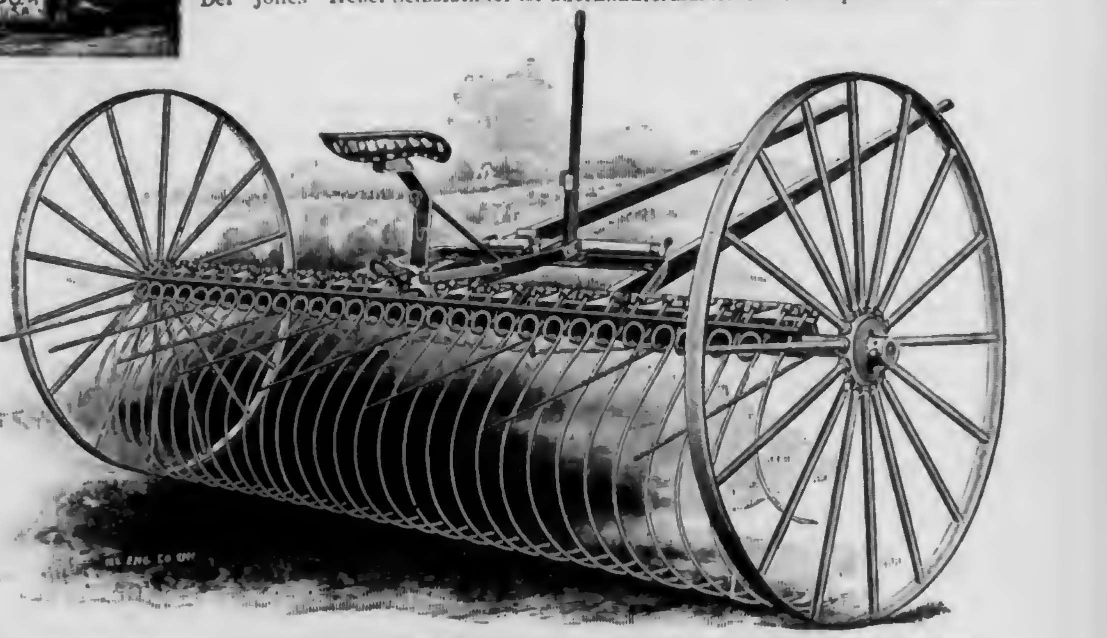
"JONES"

mit Kettenbetrieb

Er ist ein Muster von Einfachheit, Dauerhaftigkeit und Vollkommenheit. Seit Jahren im öffentlichen Wettbewerb mit der ganzen Welt, ist er für Geschäftsleute jedes Landes ein höchst gewinnbringendes, sicheres Verkaufsobject.



Die Jones Mähmaschine mit Garbenrechen ist die beste auf dem Markte, leicht stellbar und mit elastischen Kissen verseh en.



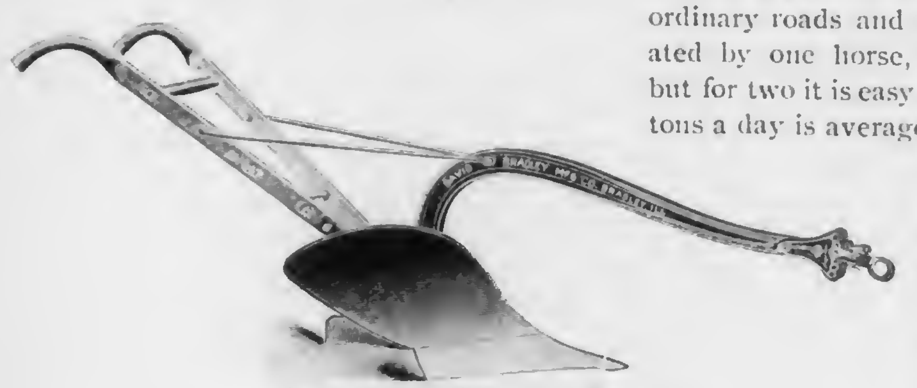
Der "Jones" stellbare Heurechen hat, was Leistung und Nachfrage anbelangt, nicht seines Gleichen; er ist der einzige stellbare Heurechen, der überhaupt fabrizirt wird.

Beschreibender Katalog auf Verlangen.

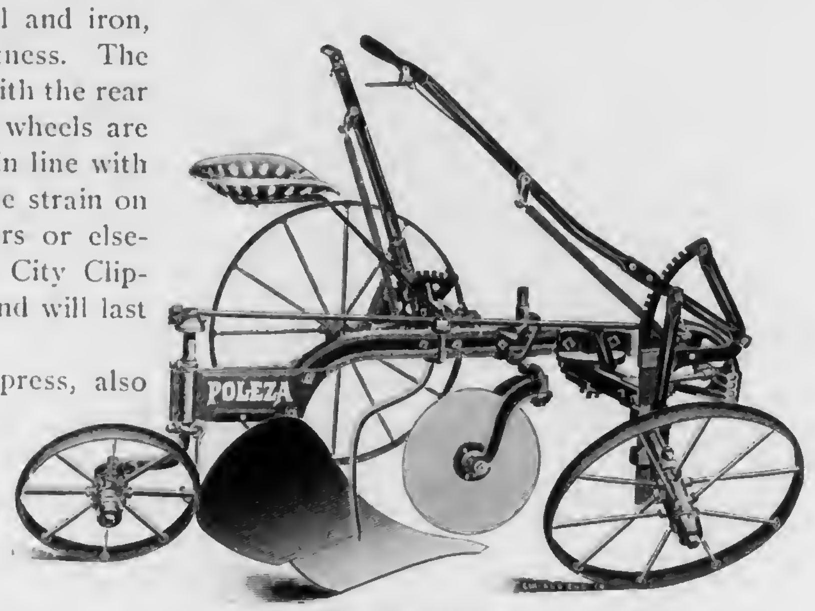
The Plano MANUFACTURING COMPANY
CHICAGO, ILL.,
Vereinigte Staaten von Nordamerika.
115 Southwark Street, - LONDON, S. E., ENGLAND.
PARIS, FRANCE.

THE DAVID BRADLEY MANUFACTURING CO.

One of the oldest agricultural implement manufacturing establishments in America is the David Bradley Manufacturing Co., of Bradley, Ill. In Chicago's early days they began business there in a locality which is now densely covered with business blocks. A few years ago, when it became necessary to again enlarge their plant, it was found to be impossible to obtain adjoining premises at a price which would permit of its occupancy for factory purposes; so they moved out of the city fifty-four miles south to what was formerly North Kankakee; the name of the place having been later changed to Bradley, in honor of their locating there, the acquisition of such an old-established plant with its hundreds of workmen being considered an event worthy of being thus remembered.

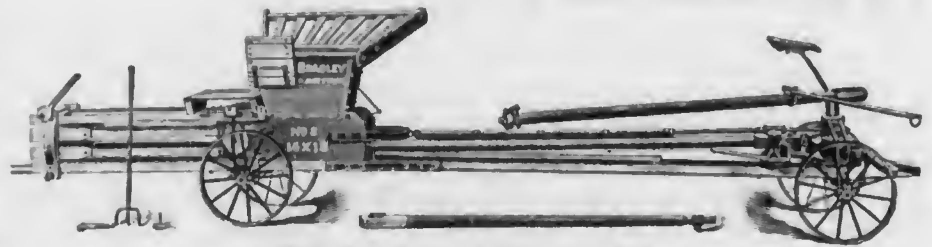

GARDEN CITY CLIPPER PLOW.
Made by the David Bradley Manufacturing Co., Bradley, Ill.

They make many kinds of implements, some of which we illustrate. Their celebrated "Garden City Clipper" walking plows have been made for over half a century, and so well made as to create a reputation of the highest order. They are used and liked in many countries because of their correct shapes and the very hard temper which their wearing parts are given, thus securing the lightest possible draft and long wear. Their Poleza, shown herewith, is a medium-price sulky plow made entirely of steel and iron, which gives strength and lightness. The draft clevis is connected by rods with the rear and furrow wheels, so that these wheels are always set by the clevis to track in line with the draft, therefore there is no side strain on them when turning at the corners or elsewhere. They have the "Garden City Clipper" bottoms above referred to and will last for years if well taken care of.



POLEZA SULKY PLOW.
Made by the David Bradley Manufacturing Co., Bradley, Ill.

The double-cam all-steel hay press, also shown, is a wonderfully powerful machine and very compact. It can be drawn by two horses on ordinary roads and can be operated by one horse, on a pinch, but for two it is easy work. Ten tons a day is average work. So compactly does it press the hay that full weight can be put into an ordinary box car. It can be used also for pressing straw, hair, excelsior and other bulky articles such as are oftentimes baled. Three sizes are made, with bale chambers 14 by 18, 16 by 18 or 17 by 22 inches.


DOUBLE-CAM ALL STEEL HAY PRESS.
Made by the David Bradley Manufacturing Co., Bradley, Ill.

This company will be pleased to send their catalogue to any one interested in goods of their manufacture and to quote prices and terms. They are thoroughly reliable and will give prompt attention to all inquiries. Their goods are well-known, both in Europe and America, and have given excellent satisfaction wherever used and in all kinds of soils.

ADAPTED TO THE SOIL.

Spanish importers are invited to an examination of several classes of American implements especially suited to Spain. They are aware of the remarkable industrial revival in progress there and of the increasing reflected activity in the cultivation of the soil. Spain is rising into new conditions and is developing new and admirable capabilities, which will soon make themselves felt in a demand for improved facilities for land cultivation.

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....MANUFACTURERS...

Farm,
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and
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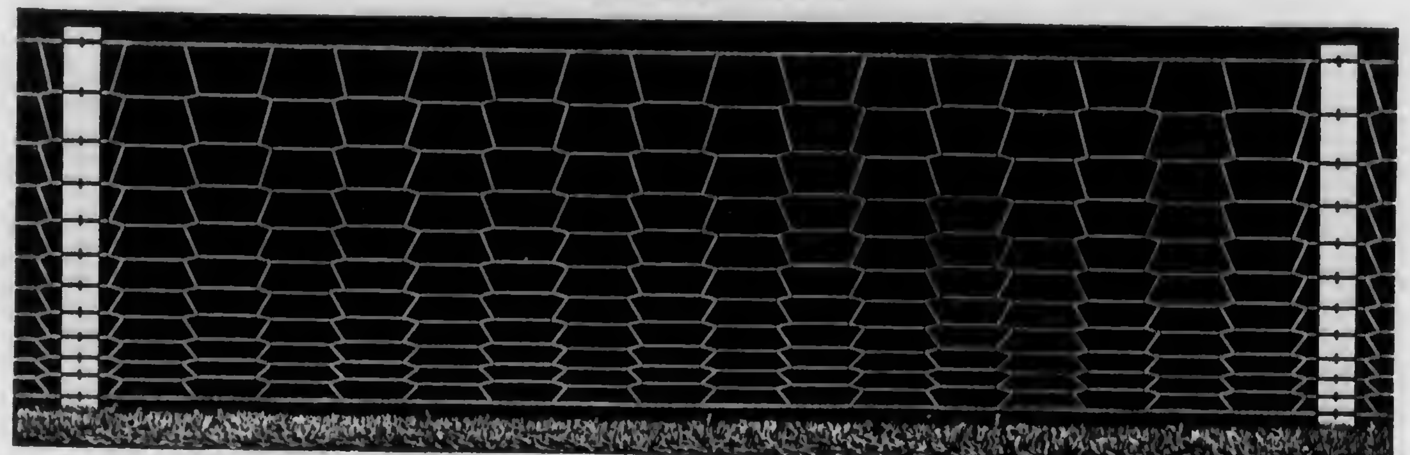
Fencing.



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etc., etc.

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WORKMANSHIP FIRST-CLASS. REPUTATION UNEXCELLED.
Write for Catalogue and Prices.

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GIVE THE EARTH A CLEAN SHAVE

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(A COPARTNERSHIP)
CHICAGO, U.S.A.

HOW KEYSTONE WOVEN WIRE FENCING IS MADE.

The subject of fencing is one that interests farmers and land owners the world over. We illustrate on this page the style of fencing manufactured by the Keystone Woven Wire Fence Co., of Peoria, Ill.

The top and bottom bars consist of two number twelve wires twisted together. The intermediate bars, as well as cross stay bars, are made of the same size wire, the actual size of which is illustrated in figure 1.

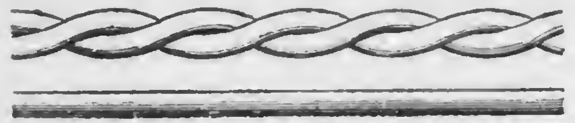
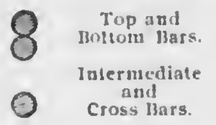


Fig. 1.



As will be seen by reference to figure 2, the cross bar or stay wire is twisted first with the two wires in the top bar, then it passes down across all the intermediate bars, and is twisted with each at the intersecting points. It is then twisted with the two wires in the bottom bar about 30 centimeters, when it passes upward, uniting with the intermediate bars in the same manner, and is again twisted with the two wires in the top bar about 30 centimeters, when it passes downward as before described.

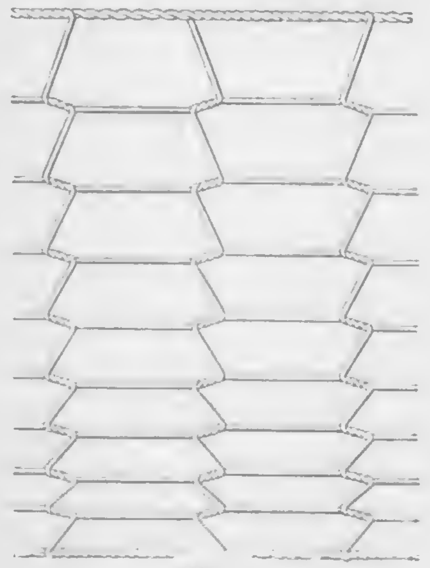


Fig. 2.

The stay wire being continuous and twisted into the cables from one stay to the other makes the fence perfectly smooth, and leaves no chance for the stay to unravel and become detached from the horizontal bars.

The stay or tie wires are twisted with the horizontal bars at the intersecting points, thus making it the most perfect connection; making it impossible to slip the stay wire out of place. In this respect the Keystone is superior to any fence in which the stays are only wound around the horizontal bars, thus allowing the stays to slip out of position, which destroys the utility and appearance of a fence.

The construction of the Keystone fencing gives it advantages possessed by no other brand for use as a hog and pig fence; as a sheep fence; as a horse and cattle fence, and a general field and stock fence. It can also be rolled up into a small compass so that it is easily portable. It is powerful and smooth and will not pull the fleece from sheep or mutilate the stock.

Keystone fencing is not affected by heat or cold. As shown in figure 6, the twists stand in a slant, which is their natural position. When the horizontal wires begin to shorten from the effect of cold, the extra length is supplied by the twists straightening out a little and coming more into the form as shown in figure 5. The difference in the form of meshes is slightly exaggerated to show the principle more plainly.

In figure 7, the solid lines show the natural position of the twist; the dotted lines show the position of the same twist under the effect of contraction or cold. The twist is always drawn back to its natural position as soon as the expanding of the horizontal bars will permit.

The same company also manufactures a fine line of farm and ornamental gates, also ornamental lawn fencing. For catalogue and prices, address Keystone Woven Wire Fence Co., Peoria, Illinois, U. S. A.

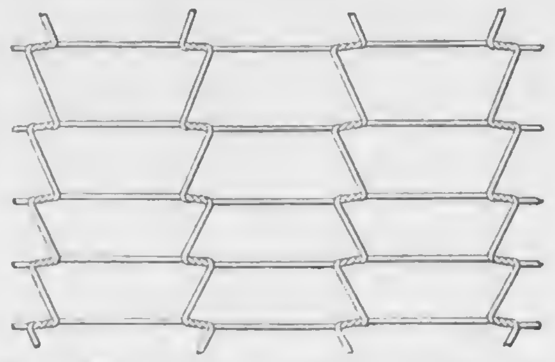


Fig. 5.—Effect of extreme winter cold, 40 deg. below zero

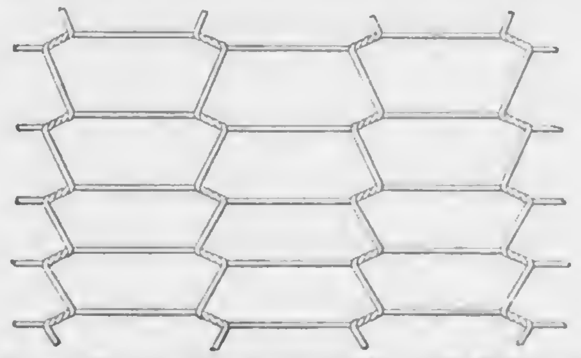


Fig. 6.—Effect of extreme summer heat, 120 deg. above zero

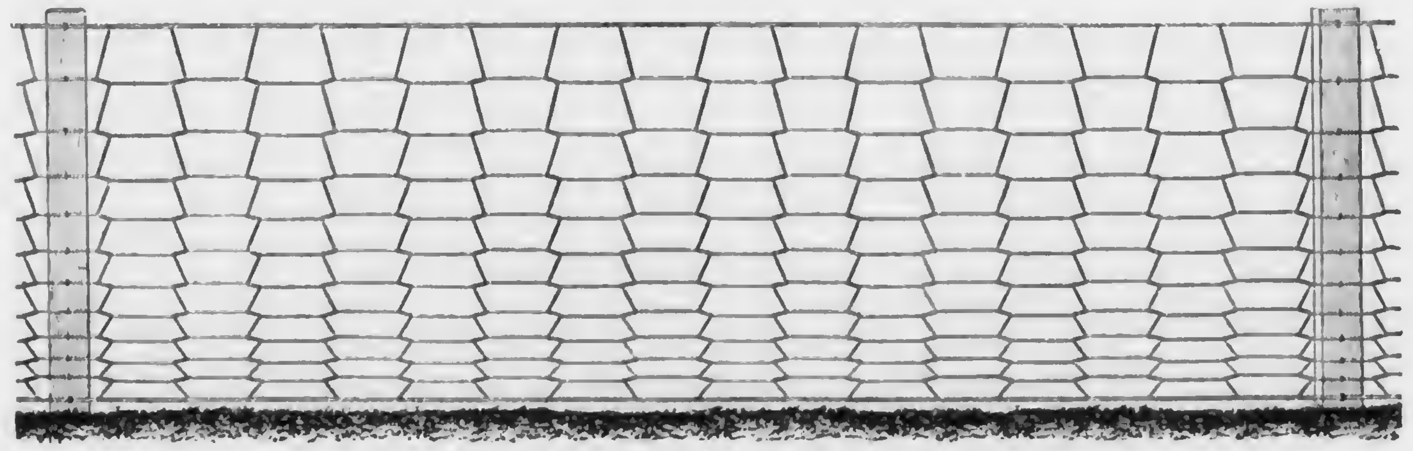


Fig. 3.—Twelve Bar Keystone Field Fencing, 147 centimeters in height. Also manufactured in various lower heights, from 45 centimeters up.

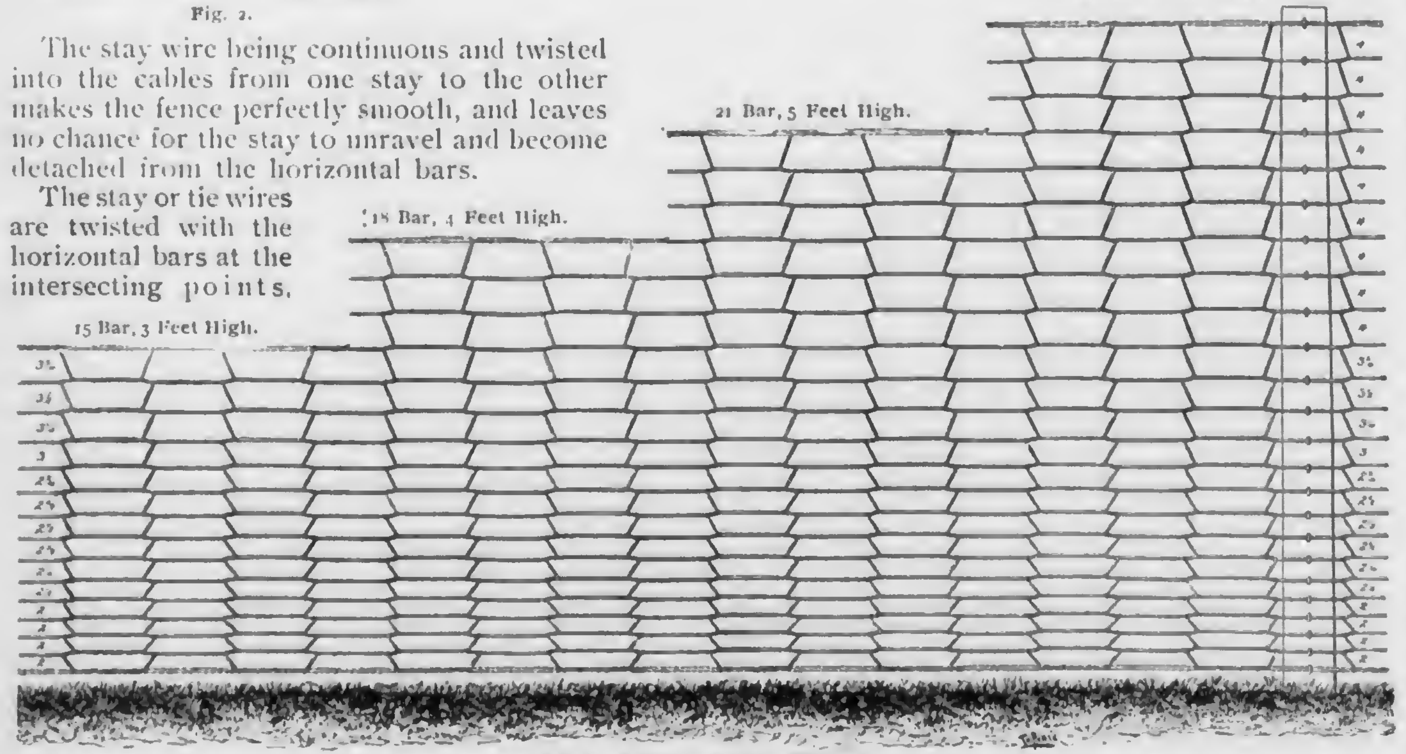

15 Bar, 3 Feet High.
18 Bar, 4 Feet High.
21 Bar, 5 Feet High.
24 Bar, 6 Feet High.

Fig. 4.—Keystone Poultry Fencing.

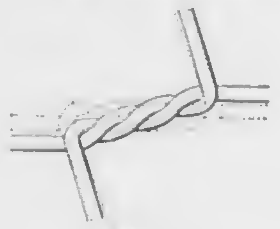


Fig. 7.

EFFICIENCY AND SALES.

Merchants in other countries who buy goods for their customers well know that when a customer finds a desirable article he will not hesitate to inform his neighbors of the fact. If not so inclined, he will be noticed by his neighbors as using an implement differing from those usually in use. If the implement possesses merit, it will soon be in demand; but if not, then the fact will quickly be manifested. American manufacturers who seek trade are doing so with the view of establishing a permanent businees, and foreign merchants or dealers who sell goods manufactured in the United States can confidently expect to receive only such as will be received with satisfaction by those who are to use them.

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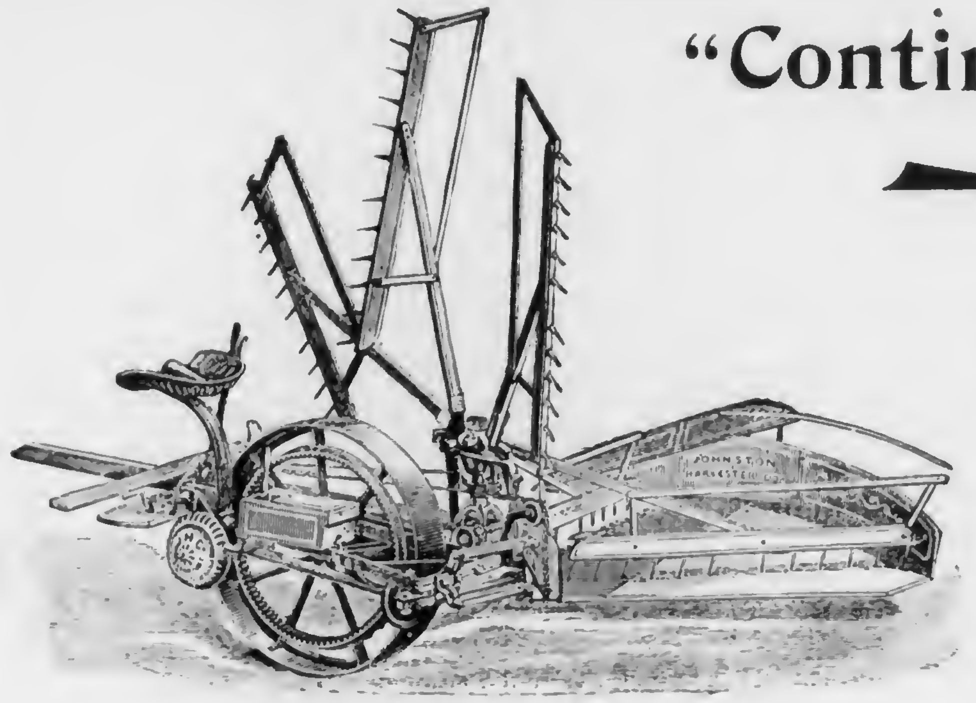

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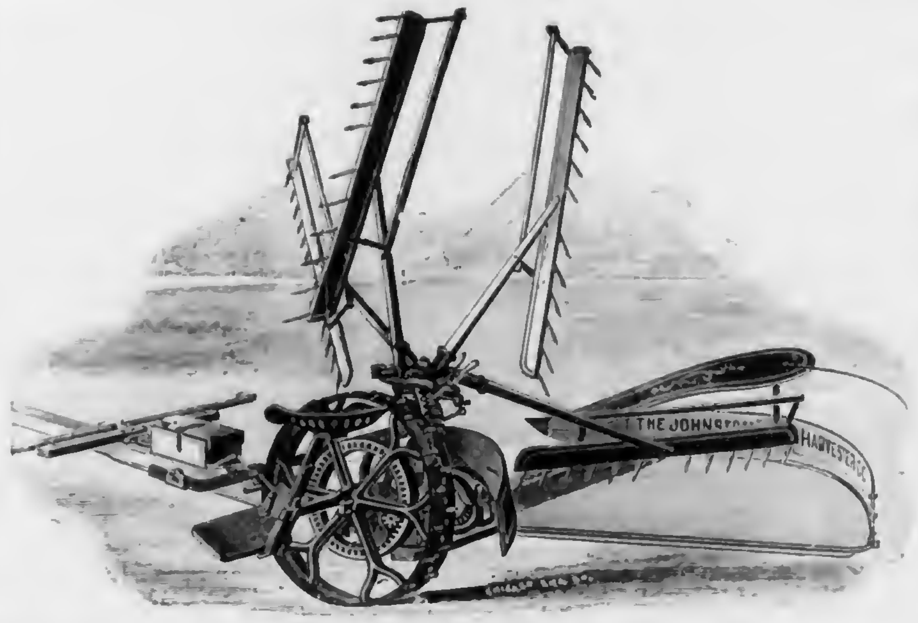

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—The—
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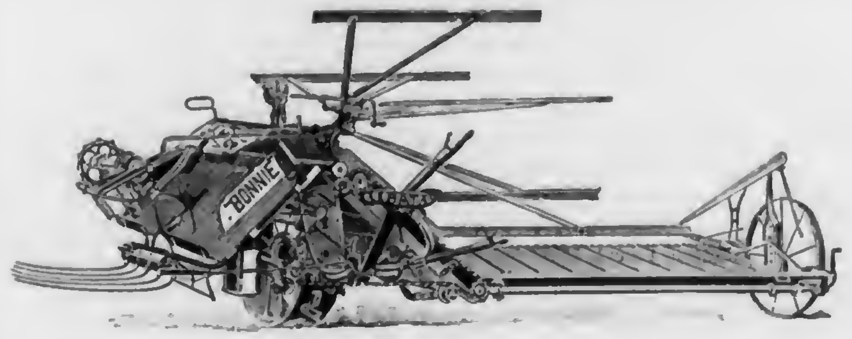

The Johnston Harvester Co.,
BATAVIA, NEW YORK, U. S. A.
EUROPEAN OFFICE—148 Boulevard de la Villette, Paris.

DIRECTORY FOR BUYERS.

The names of firms given below, together with the goods mentioned, are arranged for the convenience of buyers. These establishments are among the leading ones in the United States, are strictly reliable, have extensive facilities, and are prompt in transacting business. They fully understand the export trade and carefully look after all foreign orders. The "Export Implement Age" is kept on file in their offices, and any mention of the journal will be an incentive to even greater promptness on their part in obliging you. Inquiries from foreign buyers desiring information relative to American agricultural machinery or implements addressed to them will be given careful and prompt attention. Write in any language you prefer.

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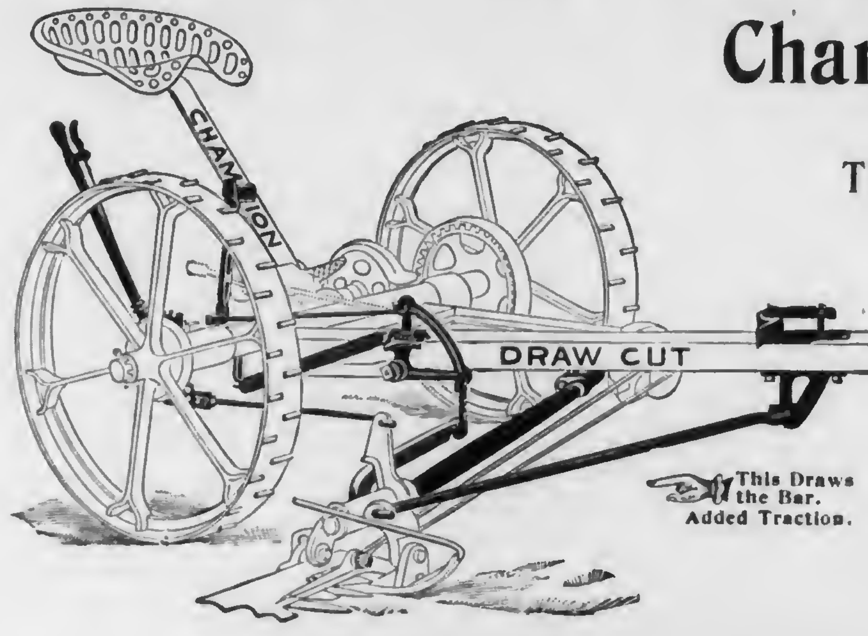
(Continued on page 56.)

CHAMPION BINDERS AND MOWERS

Champion Draw Cut.

IT DRAWS THE BAR.
NO PUSH.



This Draws the Bar.
Added Traction.

The Wheels will not lift from the ground.

The **Champion** Draw Cut Mower, though a front cut machine, has all the power and traction of a rear cut machine. On the **Champion** Draw Cut Mower the Wheels will not lift when the cutter bar comes in contact with an obstruction. It is the only Mower with an effective and practical device for lining the cutter bar with the pitman. We defy anyone to disprove these statements. Champion machines are especially strong and serviceable, and are designed to cut very close to the ground.

**Champion Machines sell readily because they are modern.
They work well and give no trouble in harvest time.**

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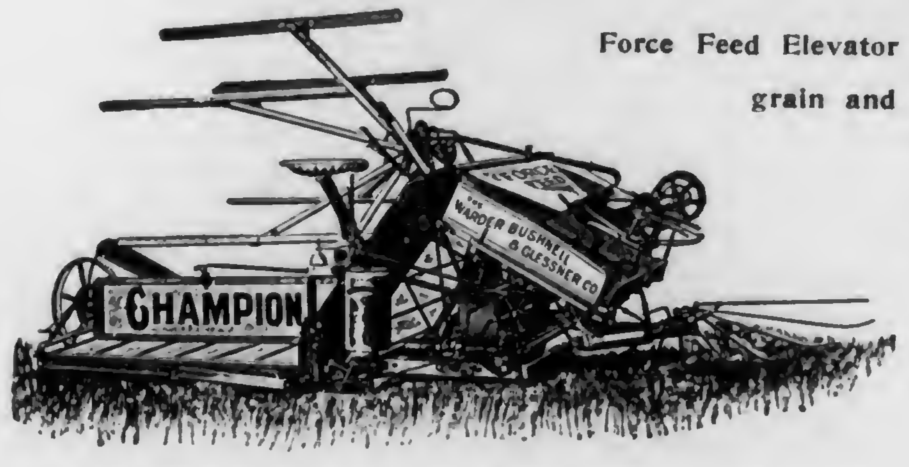

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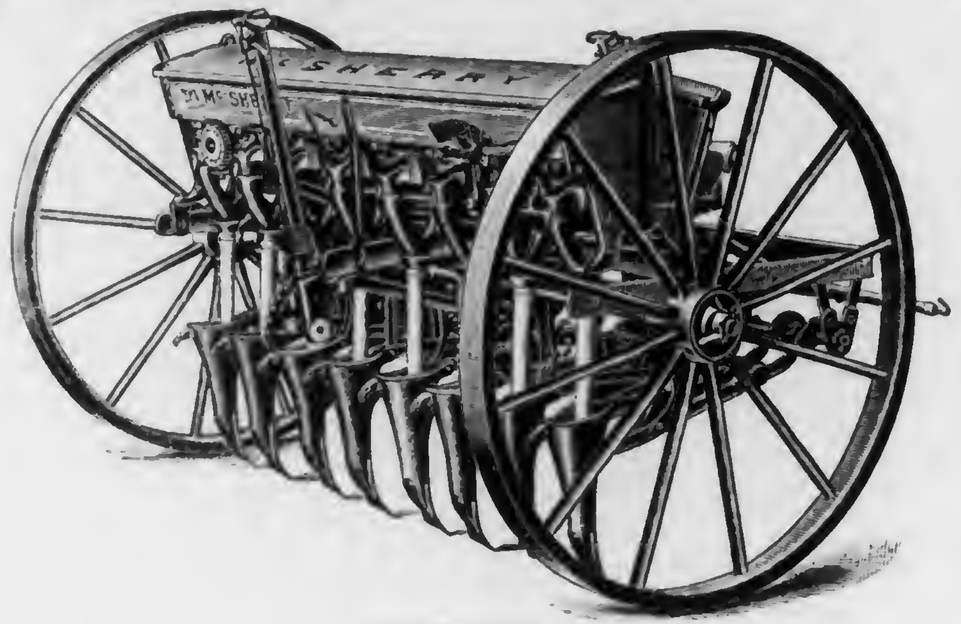
THE McSHERRY GRAIN DRILL.

In this issue of our paper our readers will see a cut of the factory of the McSherry Manufacturing Company, Middletown, Ohio, one of the largest manufacturers of grain drills in the world. The drills manufactured by the McSherry Manufacturing Company and their predecessors have been long and favorably known to the implement trade and the farmers of the United States and foreign countries where the cultivation of wheat is engaged in. The first McSherry drills were manufactured in Indianapolis, Ind., U. S. A., in 1858, and in 1862 the city of Dayton, Ohio, U. S. A., induced the patentee and founder of the business to locate his factory in that city, where McSherry grain drills were manufactured for thirty-two years. In 1893, owing to the crowded condition of their plant and their inability to secure additional ground, the present plant was built, and the manufacturing of McSherry drills has been conducted in Middletown, Ohio, U. S. A.

The McSherry drill has received the highest award at many of the largest exhibitions throughout the United States, including the Trans-Mississippi Exposition, held at Omaha, Neb., U. S. A., in 1898, where it received the highest award and gold medal in competition with many machines of its class, and their sale has so largely increased that there are now many thousands of them manufactured annually, the foreign demand showing a large increase as well as the demand of our own country.

Factory of the McSherry Manufacturing Company, Middletown, Ohio, U. S. A.


The McSherry Grain Drill.

It has been the policy of the manufacturers of the McSherry grain drills to always build strictly first-class machines, using the best material to be obtained in the market, and employing mechanics who are skilled in their departments. A cut of one of these drills will be found in this issue.

USE OF THE ROLLER.

One reason why the value of the roller on the farm has not been better appreciated has been that many farmers did not know why it was or should be, and therefore did not know how or when to use it to the best advantage, says the "American Cultivator." Like the plow and harrow, its proper work is to pulverize the soil, and the making a level surface by pressing small stones down out of the way is but incidental, and really of doubtful benefit. Certainly it would be better that the stones should be removed. To roll a heavy soil when wet makes the soil more compact and should only be done when the frost has thrown out the roots of grain, grass or clover, and they need to be pressed back and the earth made firm against the roots that they may not dry up. But to make a seed bed the ground should be harrowed to bring the lumps and hard clods to the surface, then given a chance to dry so that they will crumble under pressure, and repeat harrowing and rolling until all is fine. After seeding, roll only when land is light and dry. This presses earth down to the seed and causes quicker germination. We like a heavy roller for all this work excepting for the spring rolling of grain, and even then if the ground is not too wet. But the roller should always be so made that it can be weighted down, or so that the driver may get on when weight is needed, and dismount when it is not.

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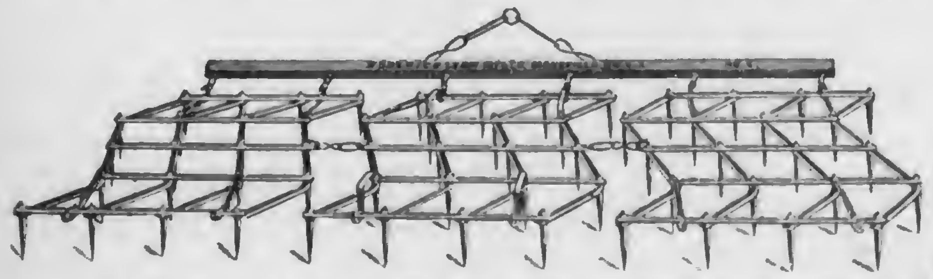

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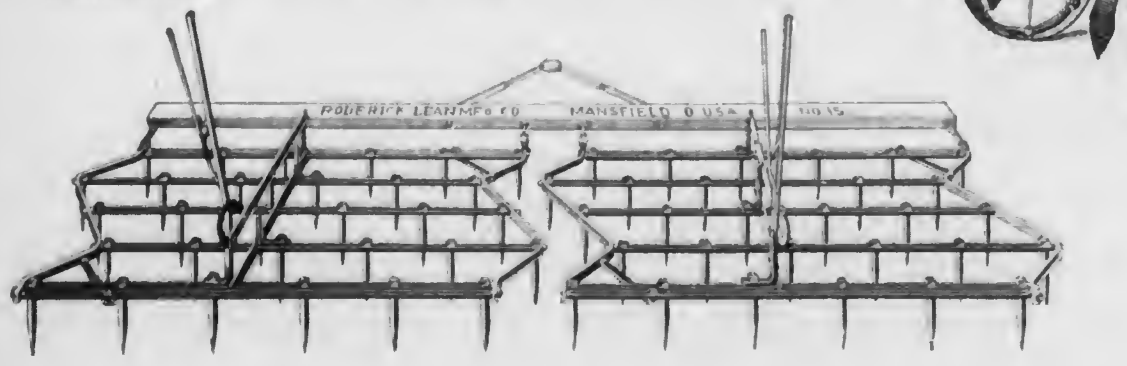

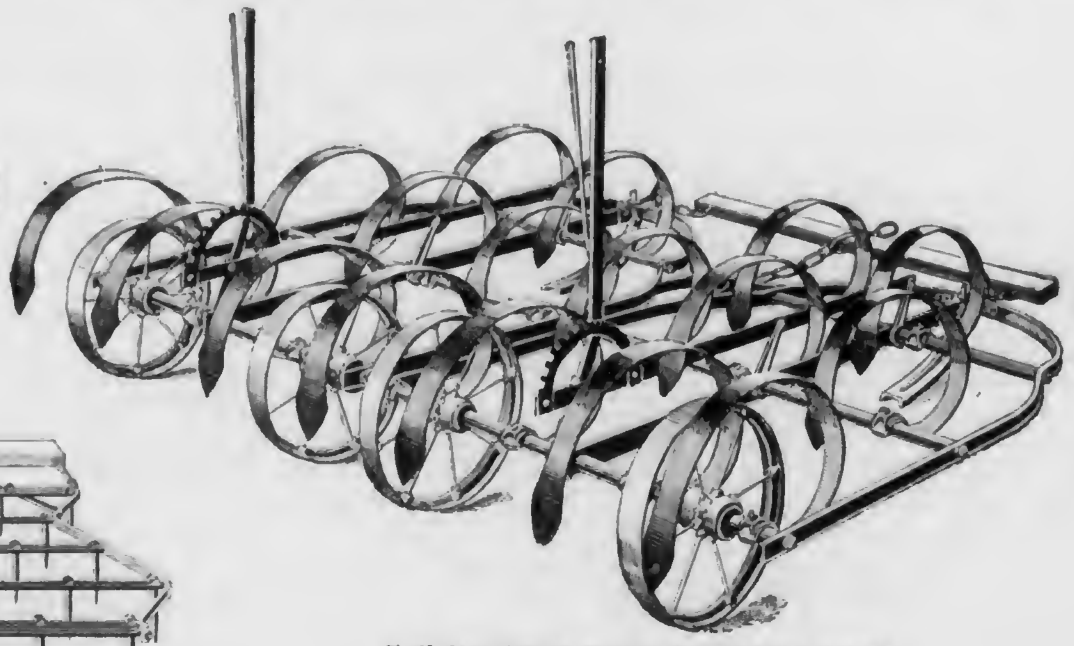

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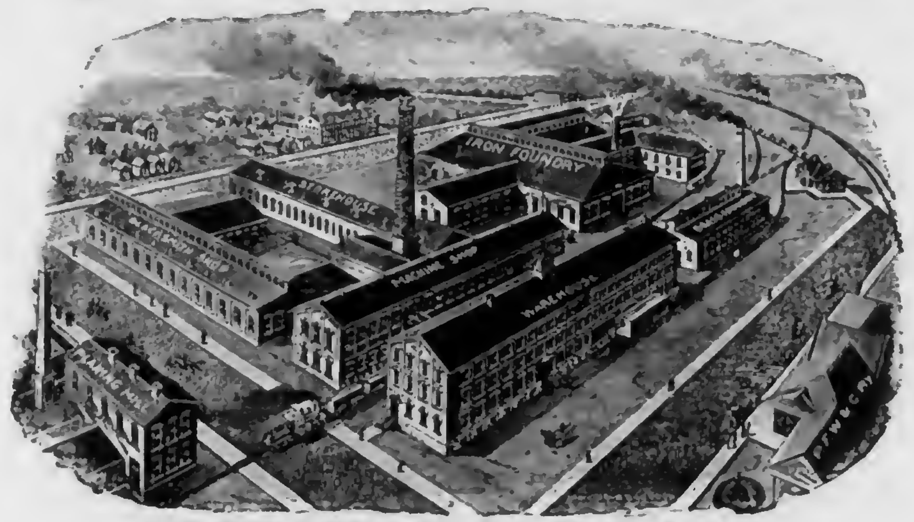

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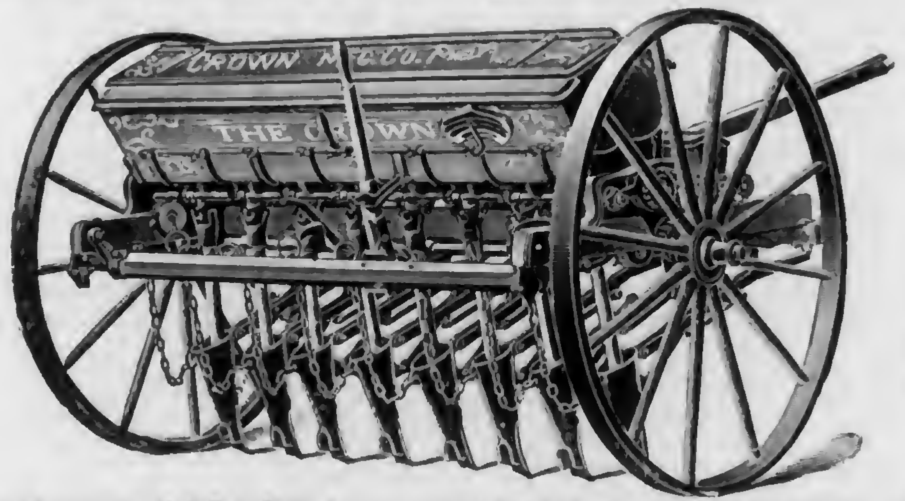

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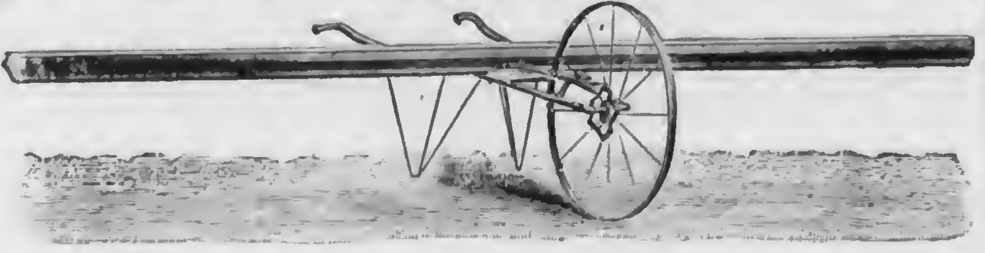

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Imperial Belt	975 "
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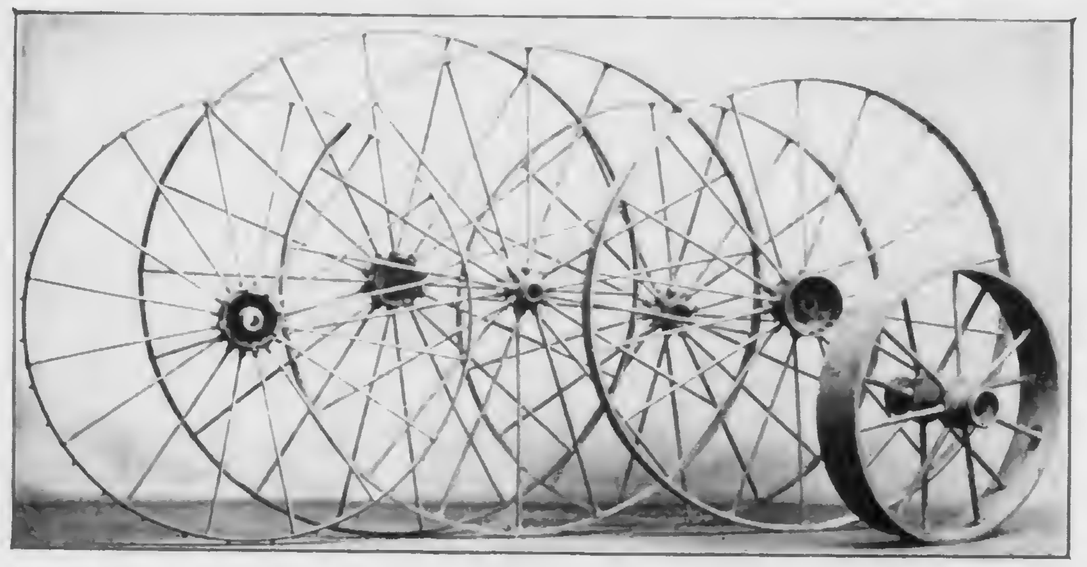
No. 32 Tubular	1,430 "
No. 45 Tubular	2,010 "
No. 60 Tubular	2,690 "



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A MONTHLY MAGAZINE DEVOTED EXCLUSIVELY TO THE EXPORT TRADE IN AGRICULTURAL MACHINERY, PUMPS, WIND MILLS, DAIRY SUPPLIES AND HARDWARE SPECIALTIES.

PHILADELPHIA, PA., U. S. A.

Vol. III. No. 4. JANUARY, 1901.

THE BUCHER & GIBBS PLOW CO., CANTON, OHIO, U. S. A.

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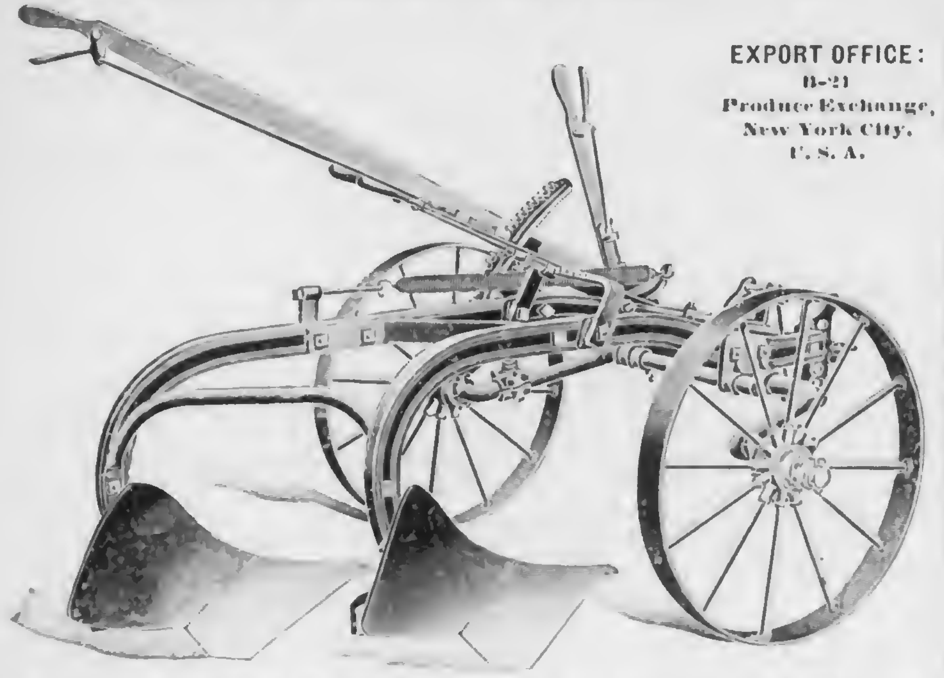
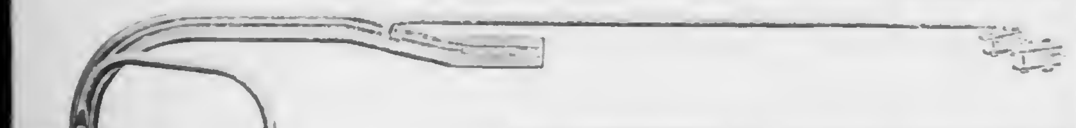


The above cut represents the IMPERIAL CONVEX WALKING GANG, Moldboard View.



Third plow bottom can be attached to two-plow gang. Plow can also be furnished with seat and rear wheel.

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Drills with or without Fertilizer Attachment.

Disc Drills,
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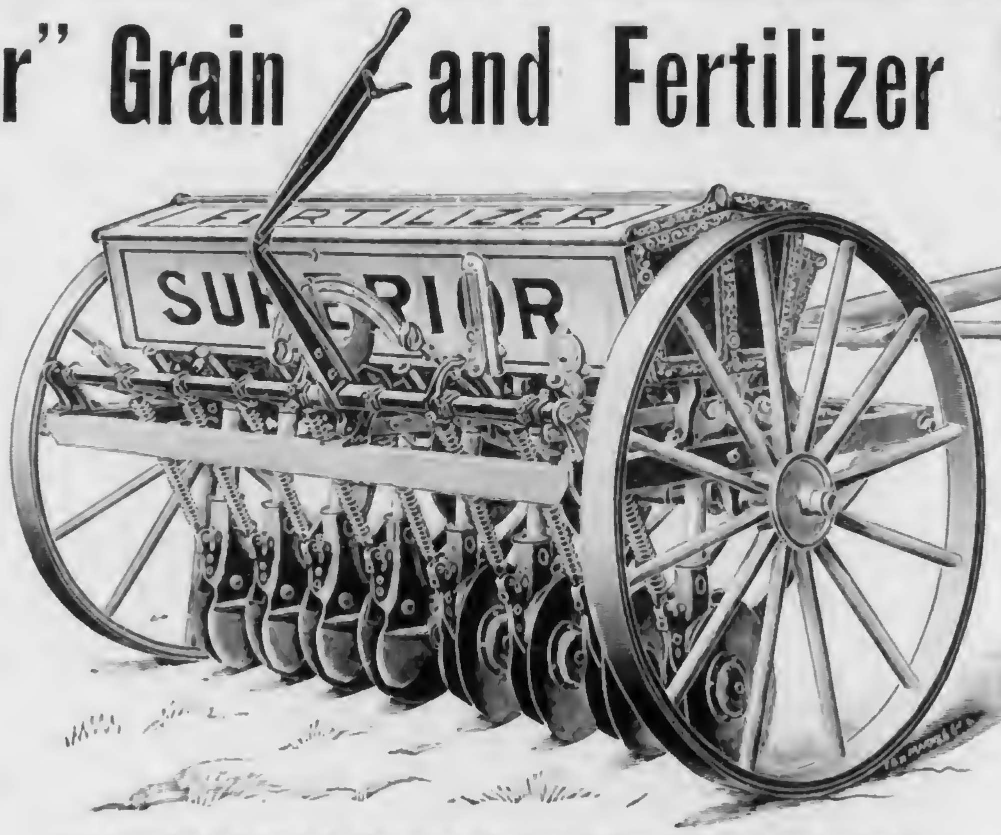

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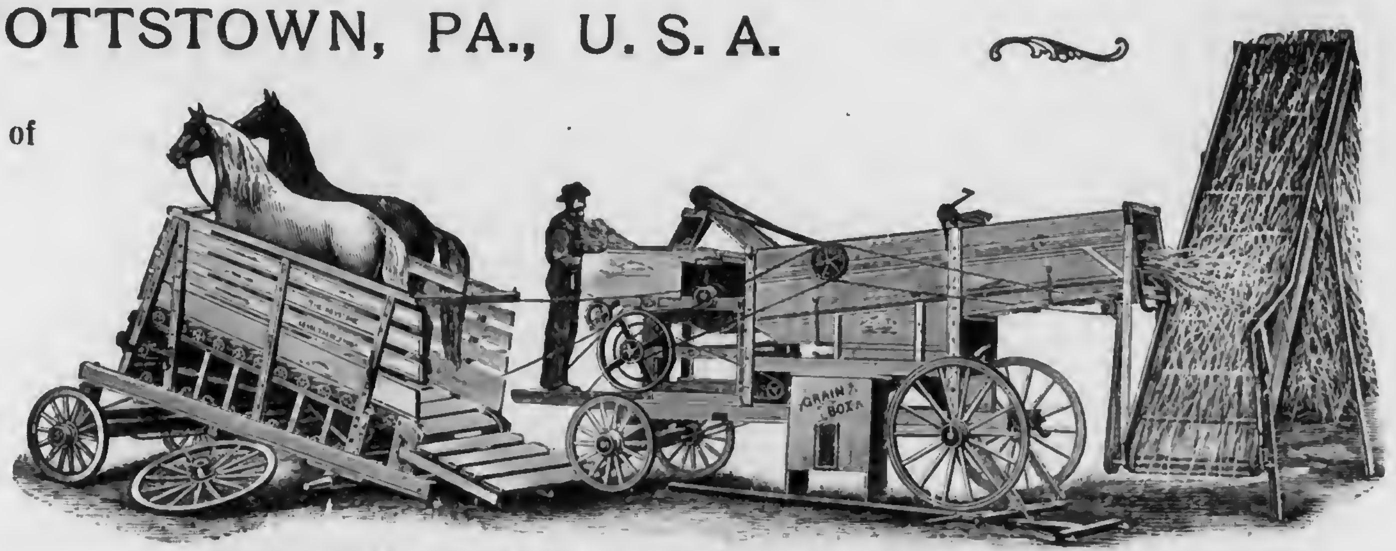
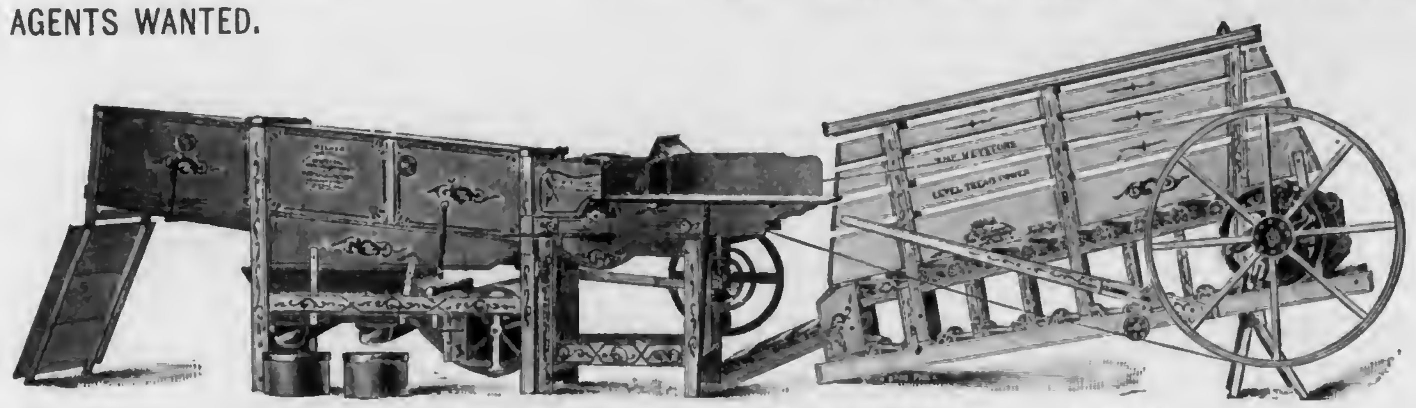


TWO HORSE POWER and 28 INCH THRESHER AND CLEANER



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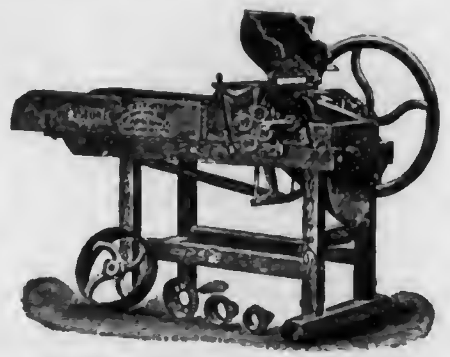

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A Great Labor Saver for the Cultivation of Sugar Beets, Trucking, etc.

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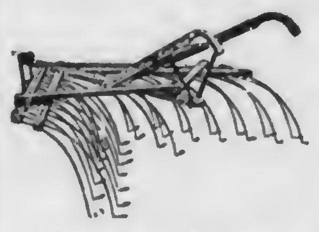

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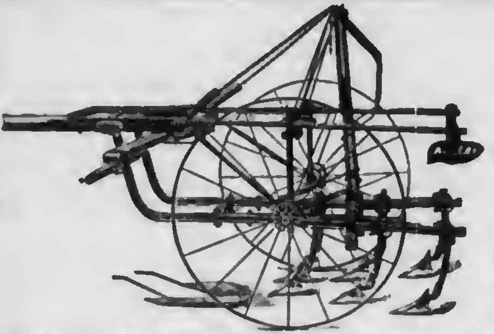
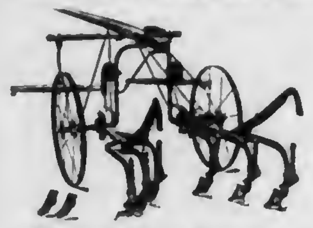

Famous OHIO 6 Shovel Riding Cultivator All Steel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Ohio Steel Field Roller

This SEAL THAT FAMOUS are BEST and

They are the Greatest Countries because suit the

MEANS OHIO GOODS always SATISFY

Sellers in all they are made to users

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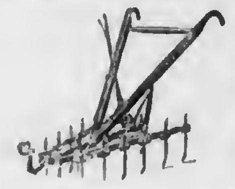
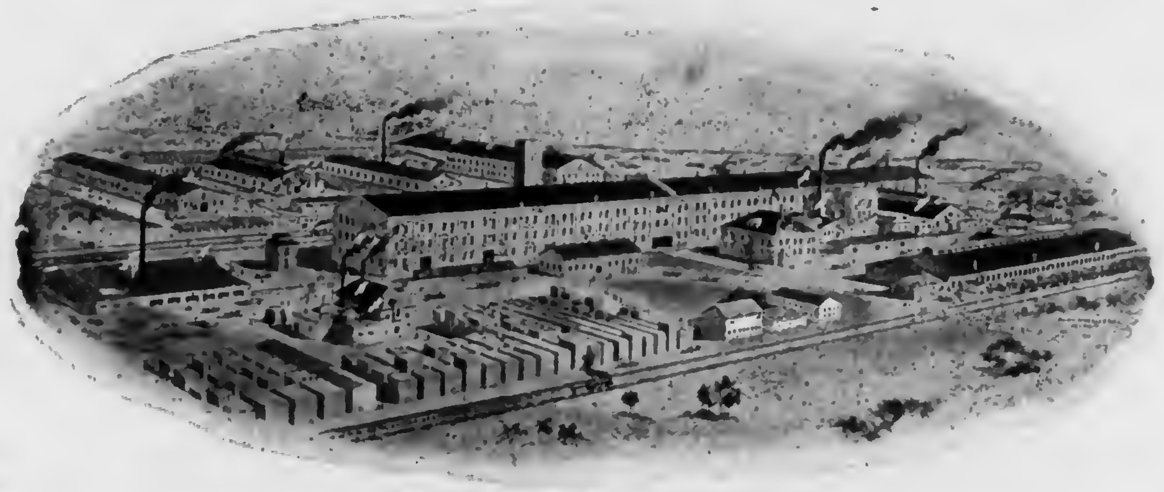
"Little Giant" 5 Tooth Cultivator, with Wheel Horse Hoes and Lever


"Little Giant" 14 Tooth Harrow with Lever

"Victor" Steel Beam Double Shovel Plow

"Dexter" Hand Garden Cultivator


NEW FACTORY COVERING 25 ACRES OF GROUND

PROSPERITY FOLLOWS THE FAMOUS OHIO

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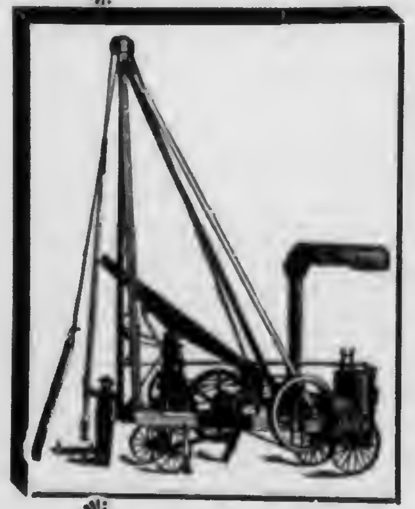
Where there is more prospect drilling done than in any territory of the same size anywhere in the world, the



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Are prime favorites. A careful count shows that about 75 per cent. of all the drills used in that section are "**Stars.**" Drillers have found that the "**Stars**" will cut better and faster and require less repairs when drilling in the hard, ore-bearing flint rock, than any other drill made. Then, too, they are well balanced in mount and are easy to move from place to place. The "**Stars**" are equally effective and superior in all kinds of drilling, either for water or prospecting for other minerals—gas, oil, salt, sulphur, etc. Drill from 250 to 2,500 feet. No objectionable springs to cramp, break or bother. Everything of best material and workmanship. Anybody can operate them without expert knowledge or previous experience. We make also a full line of drilling and fishing tools.

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We also make all sizes of Steel Towers for Mills, Tanks, Bells, etc.

We are also large manufacturers of Tanks, both Steel and Wood, and can give you any size or shape. Our line of Grinders, Shellers and Feed Cutters is large and complete; also Pump Goods, Horse Powers, etc.

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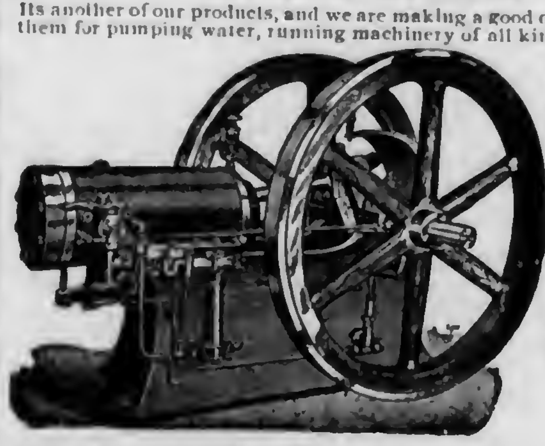
Its another of our products, and we are making a good one. We furnish them for pumping water, running machinery of all kinds on the farm, running printing presses, well machines; in fact, for any use where, a good, reliable, cheap power is required. It takes the medal wherever exhibited.



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Guaranteed

to have all the power we claim for it.

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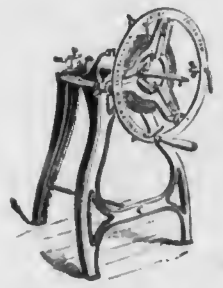
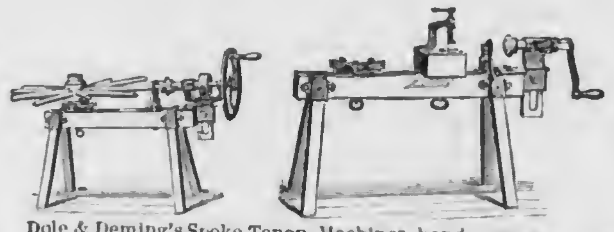

Silver's New Taper Hub Boring Machine. Hand power.

Silver's Hub Boring Machine for light or heavy work.


Dole & Deming's Spoke Tenon Machines, hand or power. These machines cut tenons 7-16 to 2 inches diameter and up to 6 inches long.

Silver's No. 1½ Drill, single geared, hand feed.

Silver's No. 1 Hand Drill. Two speeds. Self feed.

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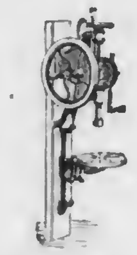
No. 12 Advance Drill. Three sizes. Light power or hand. Self feed.


No. 12 Advance Hand Drill. Three sizes. Two speeds Self feed.

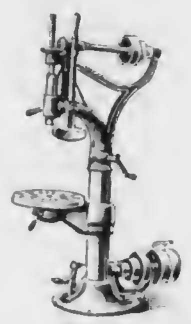


Fig. 850.
20-inch Base Drill.
Lever or screw feed.
Round or square base.

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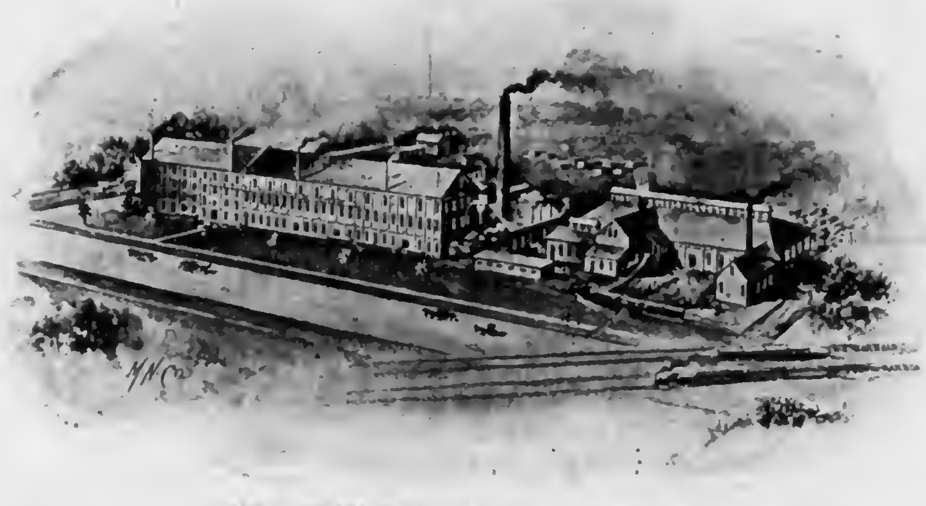
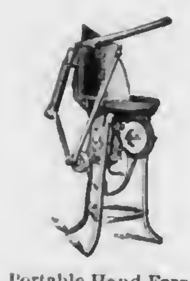

VIEW OF WORKS, ESTABLISHED IN SALEM, OHIO, 1854.

Inquiries and Introductory Orders Solicited.


Portable Hand Forge Four sizes for light, heavy and medium work.

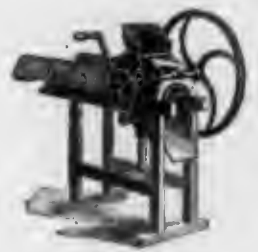


Fig 779.
Nos. 8½ and 10½, "Ohio" Hand Feed Cutter.

THE SILVER MANUFACTURING CO., Salem, Ohio, U.S.A.

New York address: 56 and 58 Pine St. Cable address: "Silver," Salem. Codes: A.B.C. 4TH LIEBERS W.U., AND MANUFACTURERS

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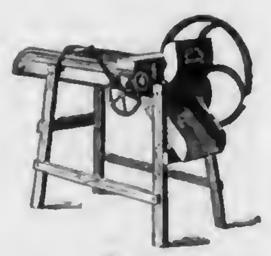
Fig. 783.
No. 11¼, "Pony" Hand Feed Cutter.

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AVERY MFG. CO.

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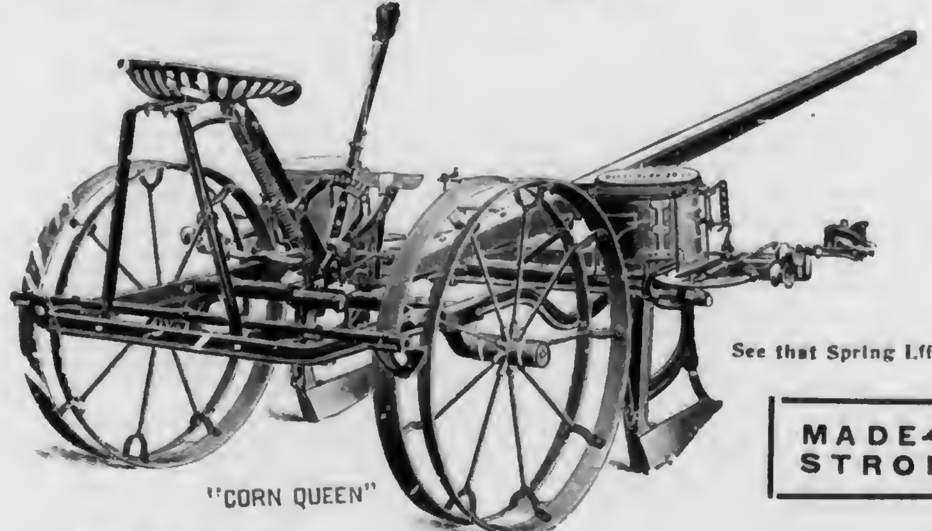
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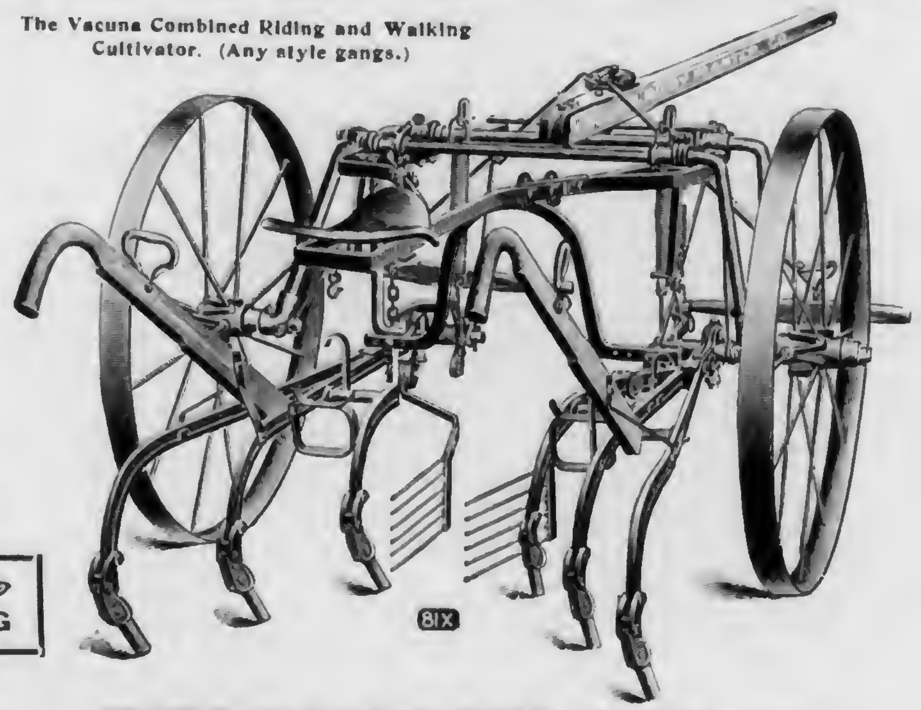
See that Spring Lift?

MADE STRONG



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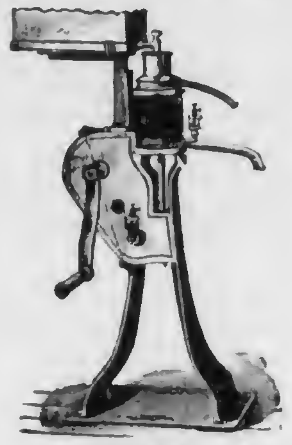
THE IMPROVED UNITED STATES CREAM SEPARATOR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The U. S. separates the cream from the milk the Easiest, the Quickest, and the Most Thoroughly of any Separator made, and on account of its simplicity and greater strength, is the easiest to care for and the most durable.

For these and other reasons the U. S. is the most profitable Separator to buy. In a cold climate it will save enough cream that would otherwise go into the skim-milk to pay for itself in a year, and in a warm climate in a much shorter time.

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Der "U. S." Entrahmer trennt den Rahm von der Milch in einer einfacheren, schnelleren und vollkommeneren Weise, wie irgend eine andere Vorrichtung, und wegen seiner einfachen Konstruktion und soliden Ausführung ist er am leichtesten zu handhaben und hält am längsten vor.

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Aus den obengenannten, und auch aus anderen Gründen, bietet der "U. S." Milch Entrahmer dem Käufer die meisten Vorteile. Durch die Ersparnisse an Rahm, der sonst in der abgerahmten Milch bleiben würde, macht sich derselbe in kalten Gegenden schon in einem Jahre und in warmem Klima in noch viel kürzerer Zeit bezahlt.

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Teleg. Adr. "VERMONFARM," Bellows Falls, Lieber's Codex, W. U.

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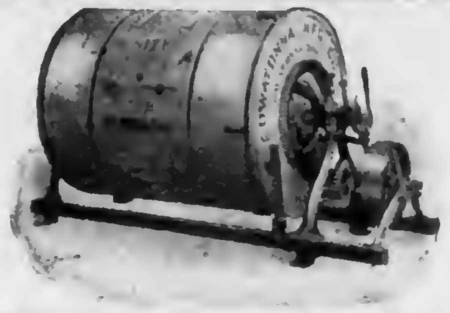
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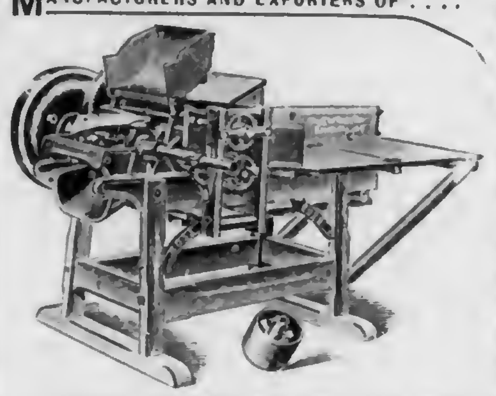
MANUFACTURERS AND EXPORTERS OF . . . .



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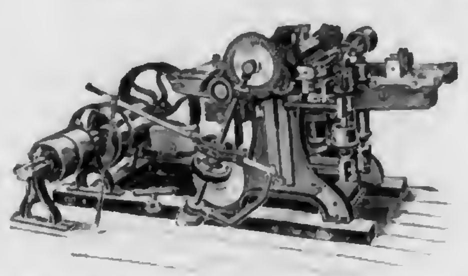

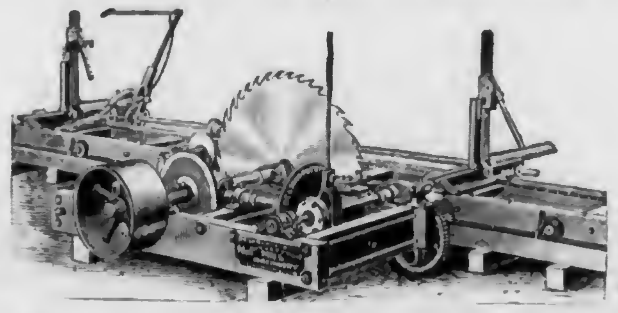

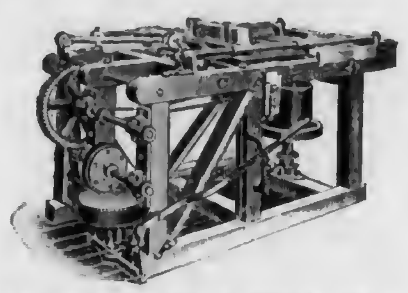

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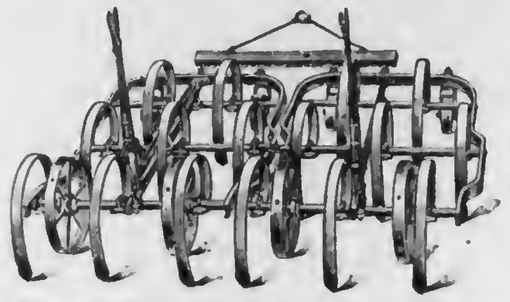
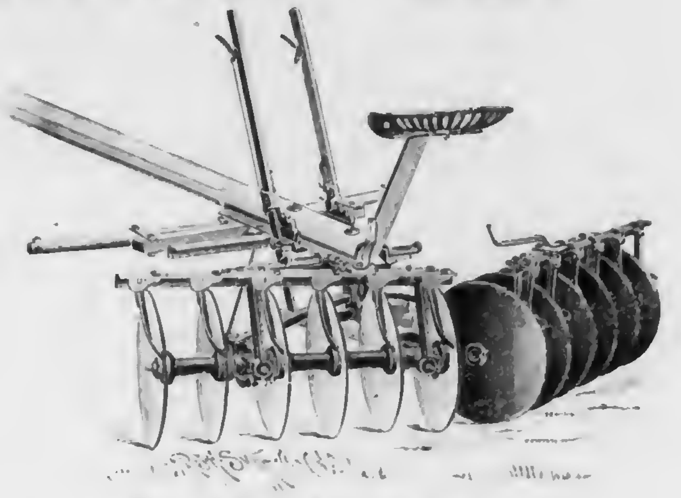
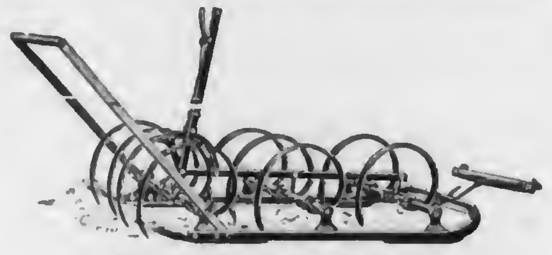
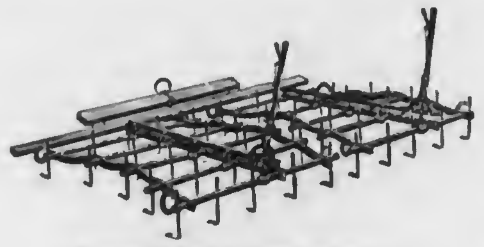

Standard Spring Tooth Harrow, with Wheels


Standard Model B Disc Harrow.


Standard One-Horse Harrow.


Standard Spike Tooth Harrow.

- Spring Tooth Harrows,
- Spike Tooth Harrows,
- Disc Harrows,
- Weeders,
- Potato Harvesters,
- Corn Shellers,
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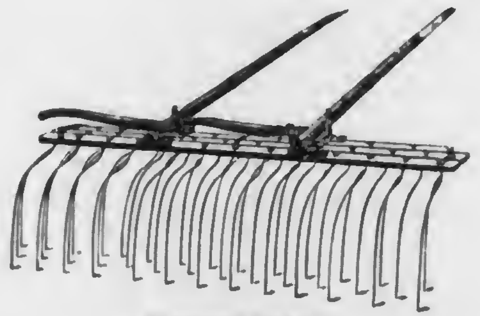
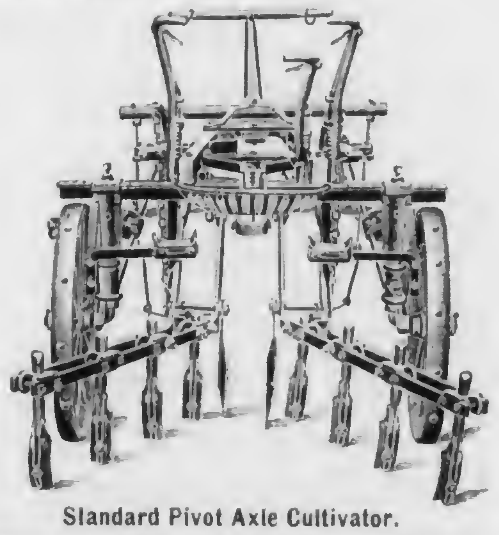
- Sidehill Plows,
- Double-Mouldboard Plows.


Standard Weeder.

Standard Potato Harvester.


Standard Pivot Axle Cultivator.

Fish Bros. Wagon Co.

FISH BROS
Wagon Company
RACINE, WIS.
ONLY MARK OF THE GENUINE FISH BROS. WAGON
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Full Line of
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WAGONS,
Teaming Gears, Machinery Trucks, and Special Wagons.

MANUFACTURED ONLY AT RACINE, WIS.

Heaviest Ironed, Best Timbered, Easiest Running.

Will carry more on the same size axle than any other wagon.

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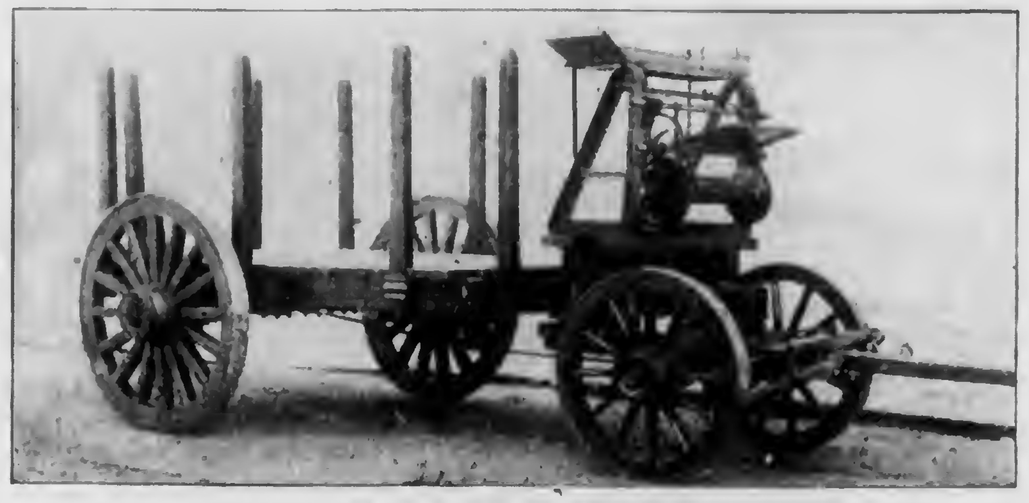
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SATISFACTION ASSURED.

Used in Every Country and in Every Climate.

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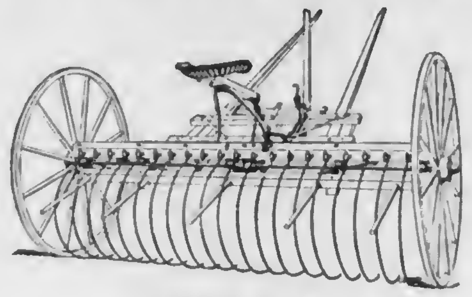
THOMAS HAY MACHINERY and HARROWS



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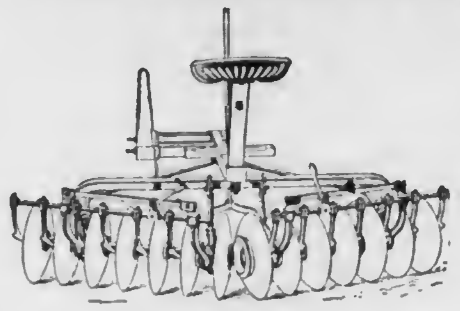
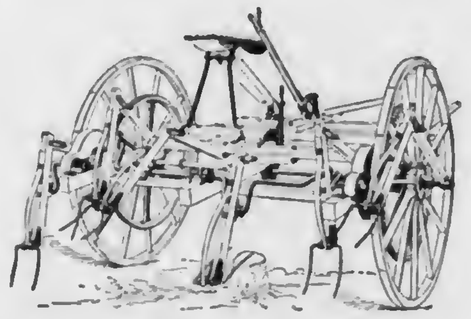
LOADERS.



Grain-Seeder Attachment for Harrows



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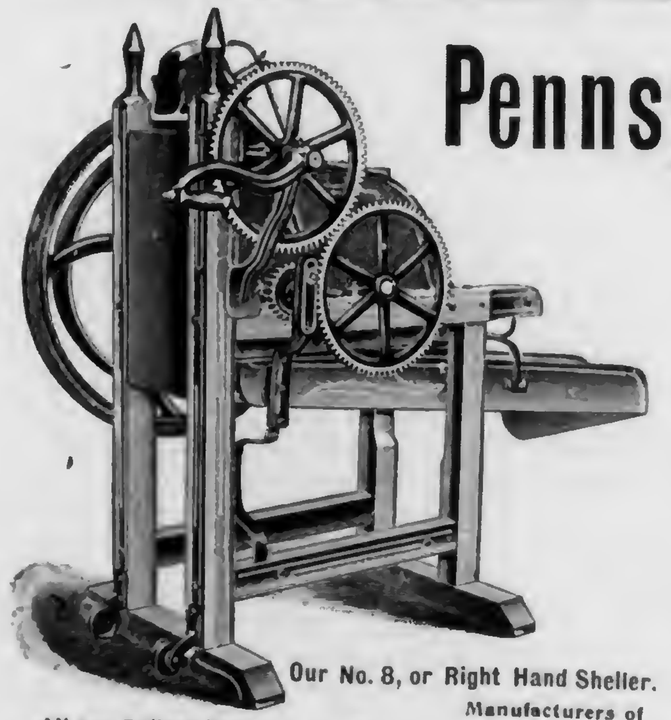
Pennsylvania Corn Shellers.



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All our Rollers have our REMOVABLE CHILLED BUSHINGS.

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Farmers' Friend Furnaces.

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Our No. 7 Sheller.

No. 2—26-inch, 8-foot, 2-section Wood Frame Roller.

Champion Land Rollers,
20 SIZES,
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We want all Dealers to have our New Catalogue.
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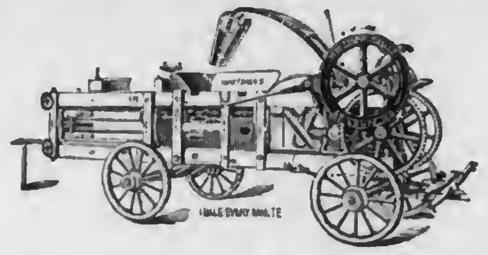
VICTORIOUS AND IN USE THROUGHOUT THE WORLD.



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A LARGE LINE OF HIGH-GRADE

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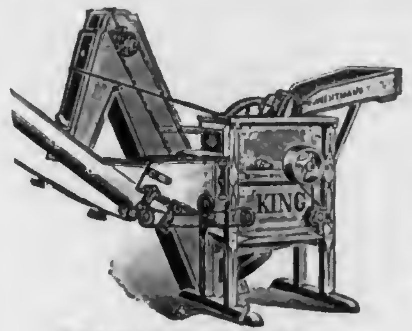
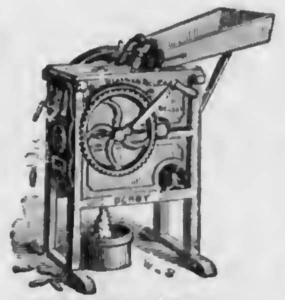


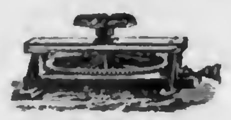
Two-hole Corn Sheller.



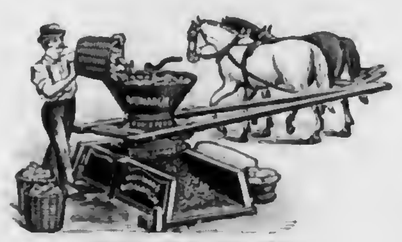
Derby Corn Sheller.

Hand Sheller.

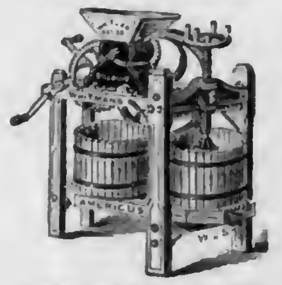
Railway Power.



Lever Power.

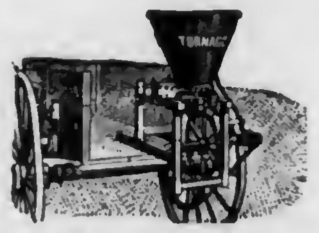


Corn and Cob Mill.



Cider and Wine Mill.

Magic Mill.



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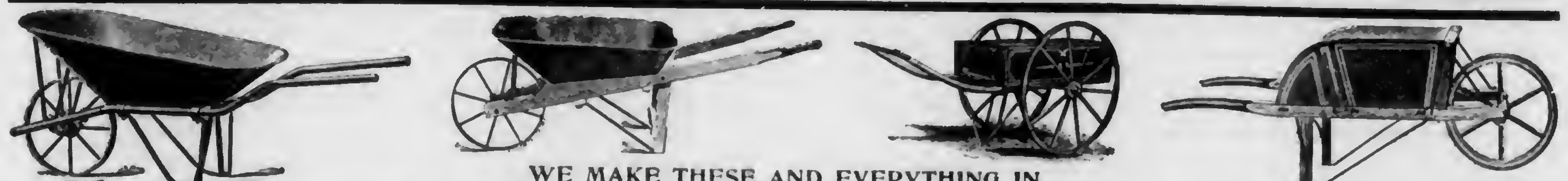

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Catalogue furnished on application in English or Spanish.

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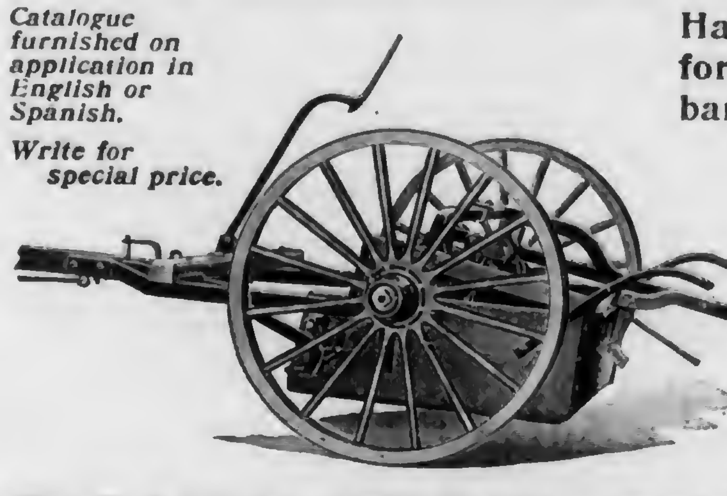
Haslups Wheel and Drag Scrapers, Steel Tubular Wheelbarrows for general purposes, Wood frame steel tray barrows and Garden barrows with steel wheels, Trucks and Grading plows.



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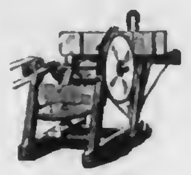
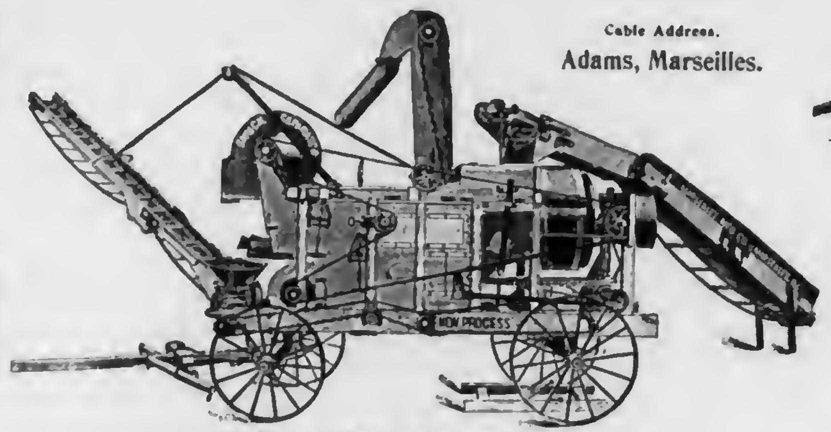
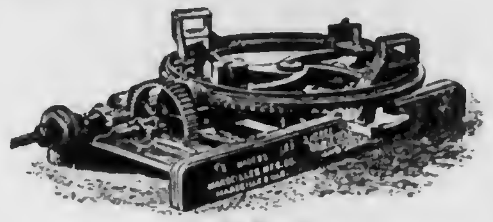

Wood Saws.

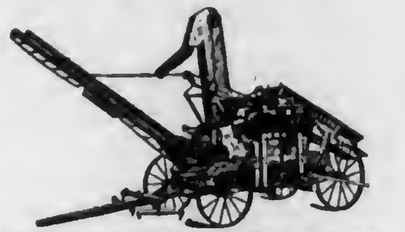
Speed Jacks.

Feed Cutters.

Cable Address.
Adams, Marseilles.


New Process Cylinder Corn Shellers for Engines.


Horse-Powers.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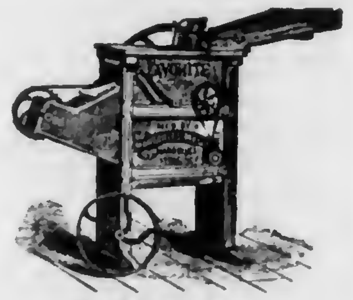
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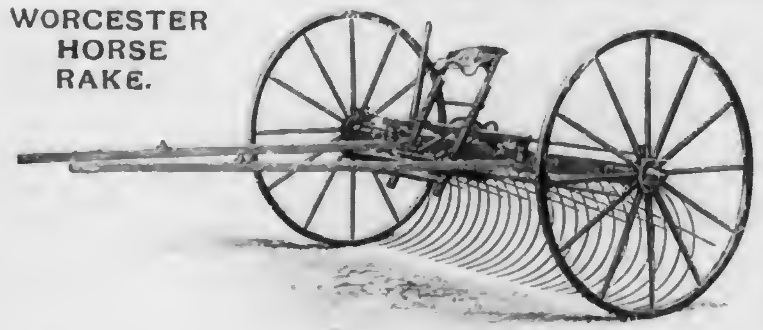
Will cut more grass for less money than any other mower on the face of the earth.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Wir fabrizieren in ausgedehntem Maasse für das Exportgeschäft, da unsere Waaren bereits in der ganzen ackerbautreibenden Welt in Gebrauch stehen und allenthalben Befriedigung bieten. Da wir dieses Geschäft noch weiter ausdehnen wollen, sind wir gern bereit, unsere Kataloge und sonstige Beschreibungen allen Interessenten gratis zuzusenden.

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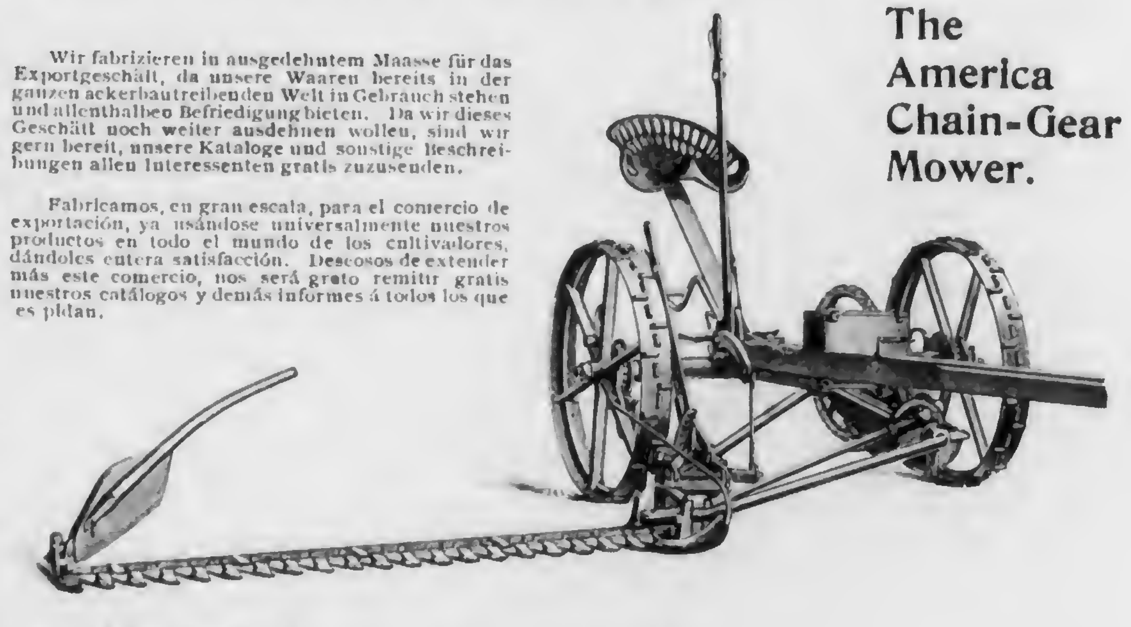
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Nous fabriquons, sur une grande échelle, pour le commerce d'exportation nos produits étant d'un usage universel à travers le monde des cultivateurs donnant partout une satisfaction complète. Désireux d'étendre ce commerce davantage, nous sommes prêts à adresser gratis nos catalogues et renseignements complémentaires à toutes les personnes intéressées.

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Worcester Chain-Gear Buckeye Mower

Bullard Hay Tedder. Kemp Manure Spreader.

Manufactured by

THE RICHARDSON MANUFACTURING CO.

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THE WORLD IS OUR FIELD.

YOU WILL ALWAYS FIND THE EMPIRE ON TOP AND IN THE LEAD

Nothing on earth in the way of a Grain Drill but what we can make for you on special order.

We make them in any size from a 6 to a 24 row, in either Hoe, Shoe, or Disc style, with or without Fertilizer Attachment. All drills are made with steel frame, and all Hoe Drills are fitted with Spring Hoes.

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Errichtet 1804
—
Inkorporiert 1876

Established 1804.
Incorporated 1876.

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Flat-Land & Side-Hill
IN GREAT VARIETY.

MORGAN PATENT SPADING HARROWS.
DISC HARROWS,
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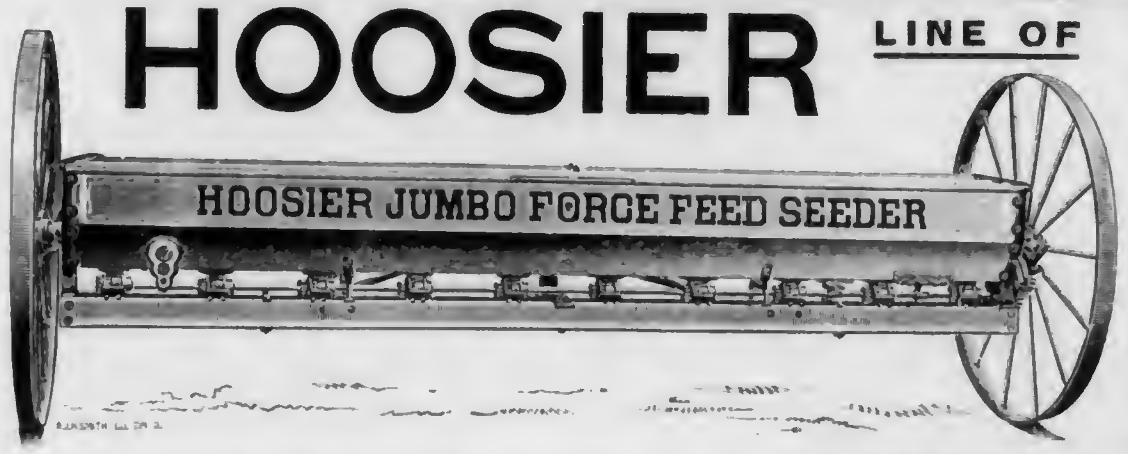
HOOSIER JUMBO FORCE FEED SEEDER

Broadcast Seeders and Sowers

In all grades, both with force feed and with agitator feed. With and without cultivators. Either wide track or narrow track.

All goods of the highest possible grade, and prices reasonable.

REMEMBER,

We make everything required in the way of a wheat-seeding machine or corn-planting tool.

WRITE US.

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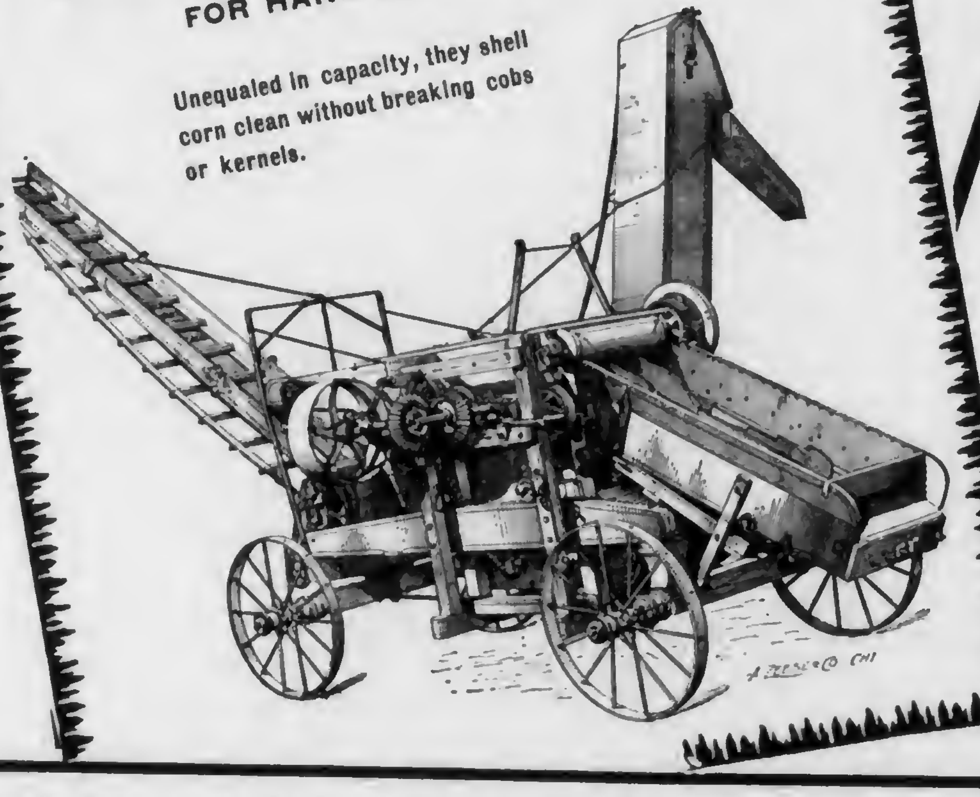
KEYSTONE CORN SHELLERS

FOR HAND OR POWER USE.

Unequaled in capacity, they shell corn clean without breaking cobs or kernels.



THERE'S PRACTICAL ECONOMY IN KEYSTONE SHELLERS.

They possess few parts, therefore run lightest and cost least for repairs.

Easily adjusted to work in any variety or condition of corn, they often do good work where others fail entirely.

A Keystone Sheller usually does as much work as a size larger of other machines.

It leaves the cobs unbroken and in best shape for fuel.

Larger sizes are fully equipped with latest labor-saving devices—have the Keystone self-feeder, new adjustable elevators, etc.

Write for full particulars of our immense line of these machines—the standard for forty years.

KEYSTONE MFG. CO.,
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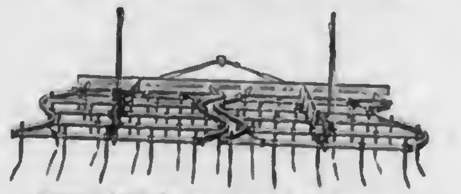
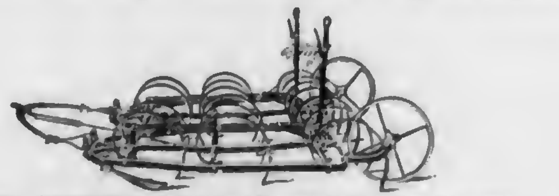
Farm Tools.

Spring-Tooth Lever Harrows,
Spike- " " "
Spring Flexible Disc "
Five-Tooth Cultivators,
Steel Hand and Self-Dump Hay Rakes.

Catalogue Mailed upon application.

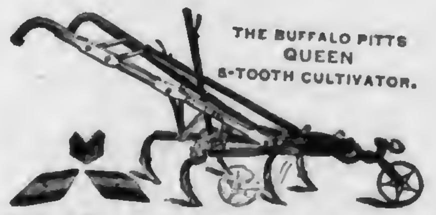


Buffalo Pitts Spring-Lever Spike Harrow.

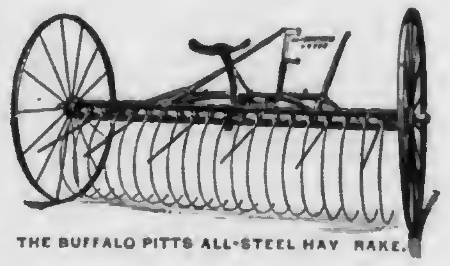


Buffalo Pitts Combination Wheel and Runner Spring-Tooth Harrow.

THE BUFFALO PITTS QUEEN 5-TOOTH CULTIVATOR.



Dotted line shows wheel released and thrown under for transportation.



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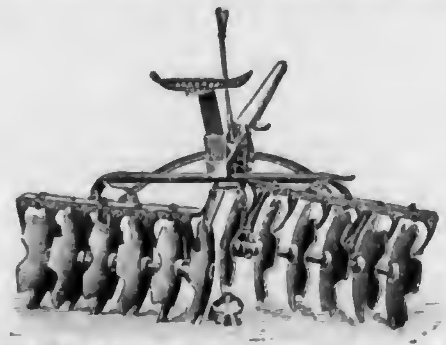

Buffalo Pitts Spring Flexible Spade-Cut Disc Harrow.

Buffalo Pitts Spring Flexible Disc Harrow.

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Sandwich Corn Shellers

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All Sizes and Capacities, and for Hand, Horse or Steam Power.

Work Fast.
Shell Clean.
Clean the shelled Corn perfectly.
Last Longer than Others.

Built by the Oldest and Largest Sheller Manufacturers in the World.

Mounted on Wheels for transportation from place to place, or will be shipped without mountings.
We also manufacture **Hay Presses, Horse Powers, Hay Loaders, and Feed Mills.**
We invite correspondence. Catalogue mailed free.

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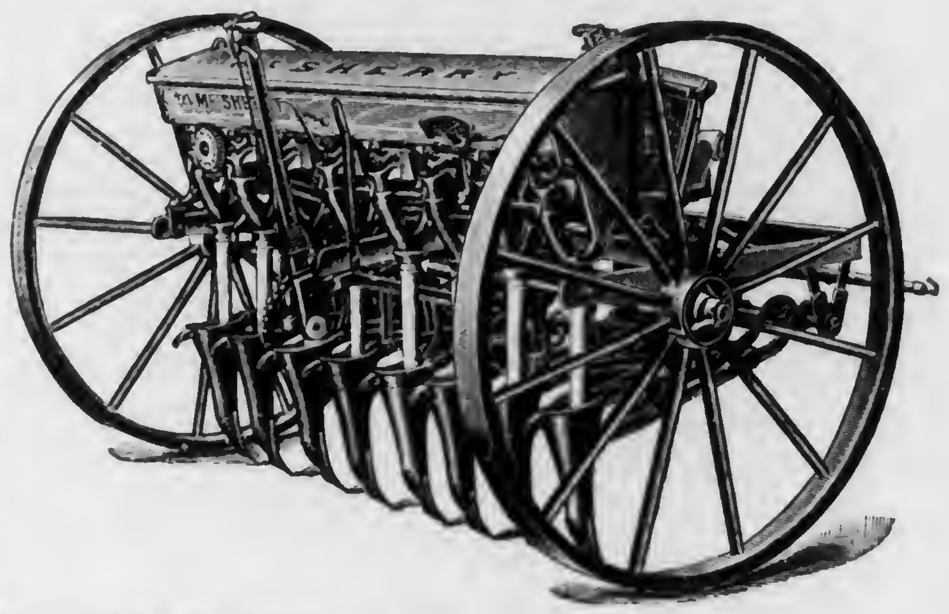
SEEDERS, SOWERS, in all Sizes and Styles.



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HALLADAY STANDARD,
U. S. SOLID WHEEL,
GEM AND COMET.

HALLADAY STANDARD.

PUMPS, TANKS,
FEED MILLS,
CORN SHELLERS,
AND WOOD SAWING MACHINES.

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The EXPORT IMPLEMENT AGE.

$1.00 PER YEAR . . .

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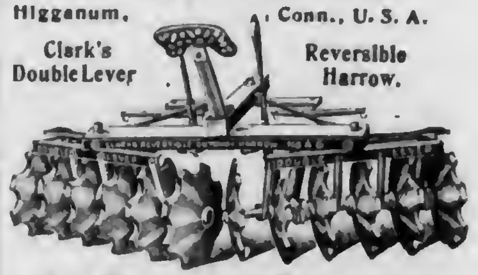
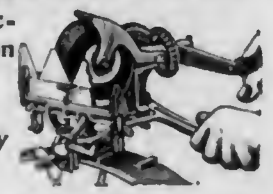
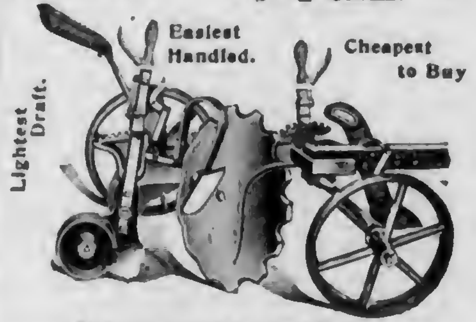
Clark's Double Lever Reversible Harrow.



Sole Manufacturers of Dutton Mower Knife Grinder.



Clark's Sulky Disk Plow.



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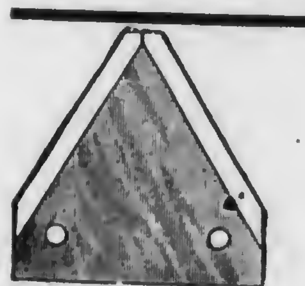

Our 1901 Catalogue, No. 54, furnished free upon application.

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Manufacturers of

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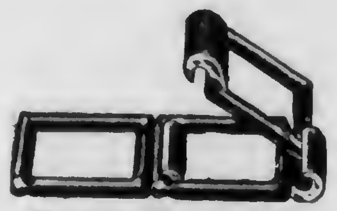

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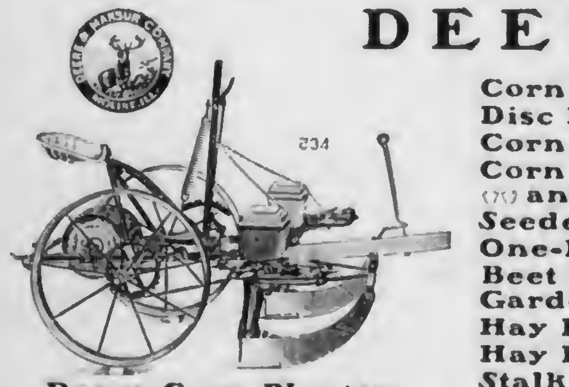

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Force Drop—Spring Lift—Check Rower, Drill and Foot Drop—Automatic Reel—Adjustable Seat, etc.

- Corn Planters,
- Disc Harrows,
- Corn Shellers,
- Corn Huskers and Shredders,
- Seeders,
- One-Horse Drills,
- Beet Tools,
- Garden Tools,
- Hay Rakes,
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- Stalk Cutters,
- Disc Cultivators,
- Etc.

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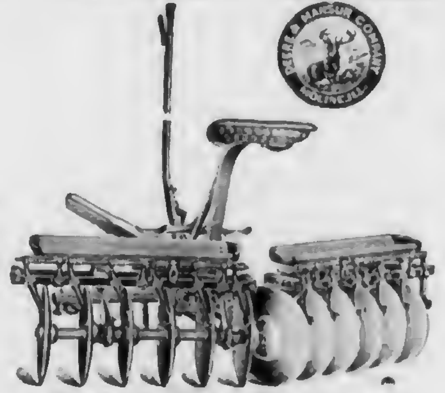


Deere Disc Harrow.

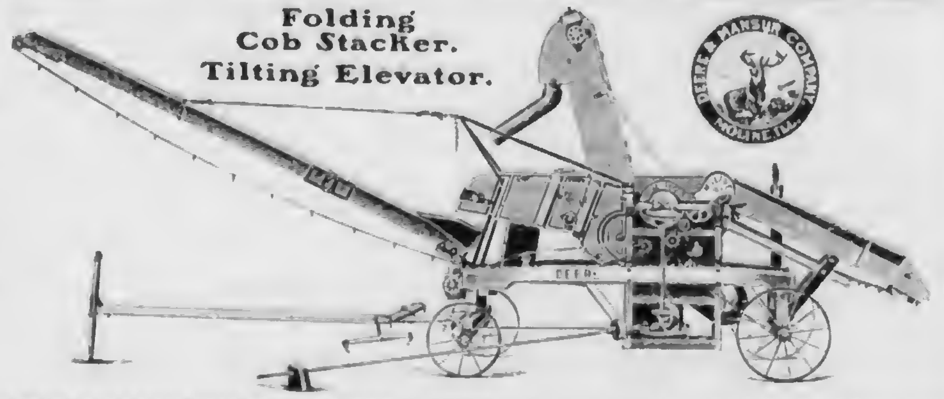
Cross Bar of Steel Tubing—Steel Shanks—Wood Bearings, with Oil Tubes—Steel Scrapers—Long Lever—Steel Weight Boxes.

DEERE SHELLERS

Will shell more corn with less power than any machine on the market. The corn is perfectly cleaned, and the cobs are left in good shape for fuel. No sieve to clog in damp corn.

Circular free.

Folding Cob Stacker.
Tilting Elevator.



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Makers of Over 200 Sizes and Styles
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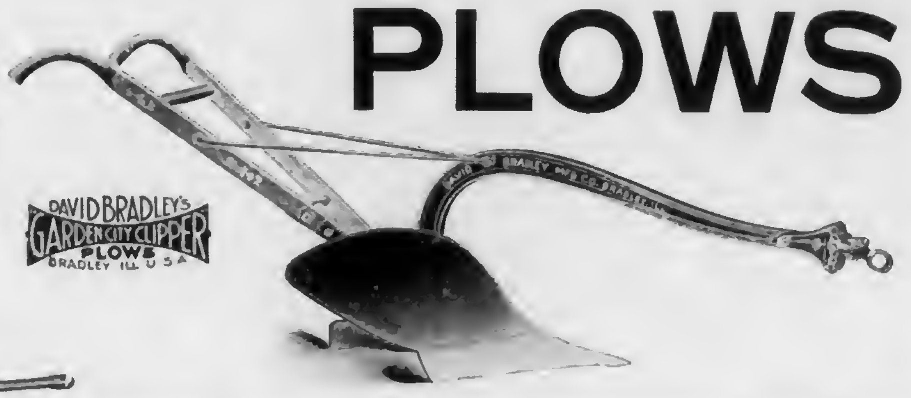
PLOWS

NO OTHER make has ever approached them in the two great **ESSENTIALS** for a perfect Plow, viz.: **CORRECT SHAPE** and **UNIFORMLY HARD TEMPER.** Our Catalogue No. 9 (page 3) explains just why this Plow has attained its great popularity. Please send for it. We make both **WOOD AND STEEL BEAM.**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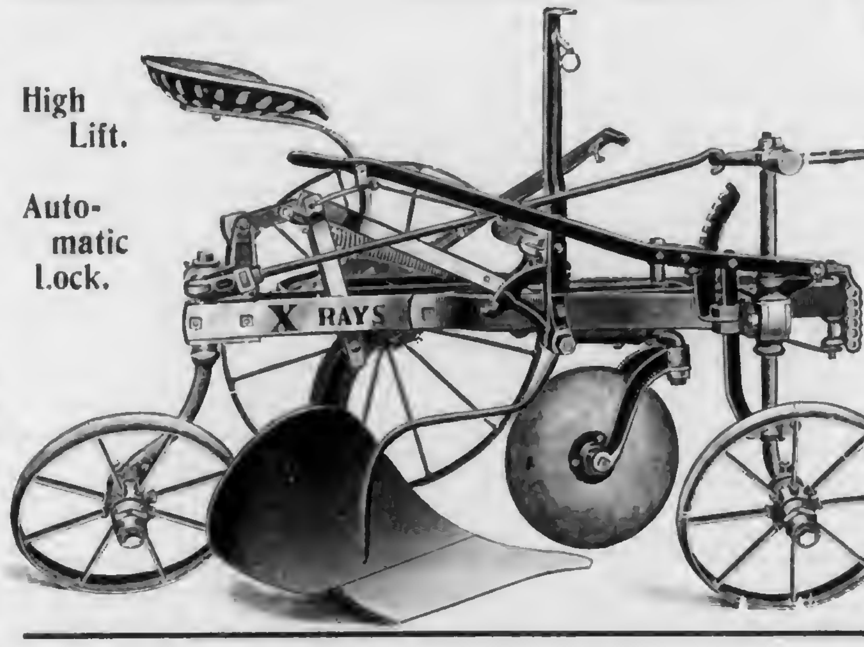
Automatic Lock.



X-Rays Sulky and Gang Plows

Have a powerful **LIFTING SPRING.** A boy can handle them easily.

A PATENTED STOP carries the Plow on the frame and lightens draft.

A SPRING CLEVIS eases draft and saves breakage.

"GARDEN CITY CLIPPER" bottoms are put on these Plows.

BEST WORK with **LIGHTEST DRAFT.**

See December issue of this paper for more detailed description.

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VERY FEW WORKING PARTS.
NOT A COG NOR CHAIN ABOUT IT.
NOTHING TO GET OUT OF ORDER.

3 sizes bale chamber: 14 x 18, 16 x 18 and 17 x 22

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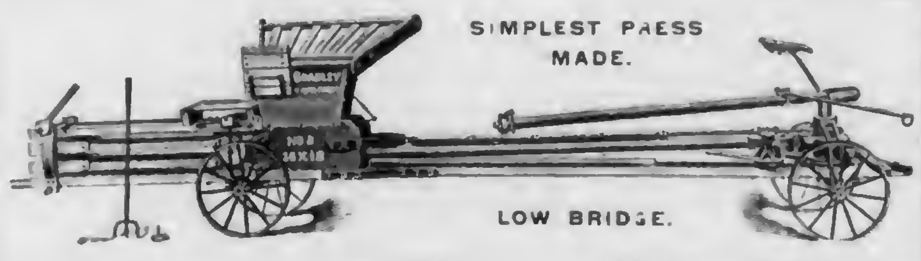
FULL CIRCLE, CONTINUOUS BALER.
LARGE CAPACITY. VERY POWERFUL.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LOW BRIDGE.

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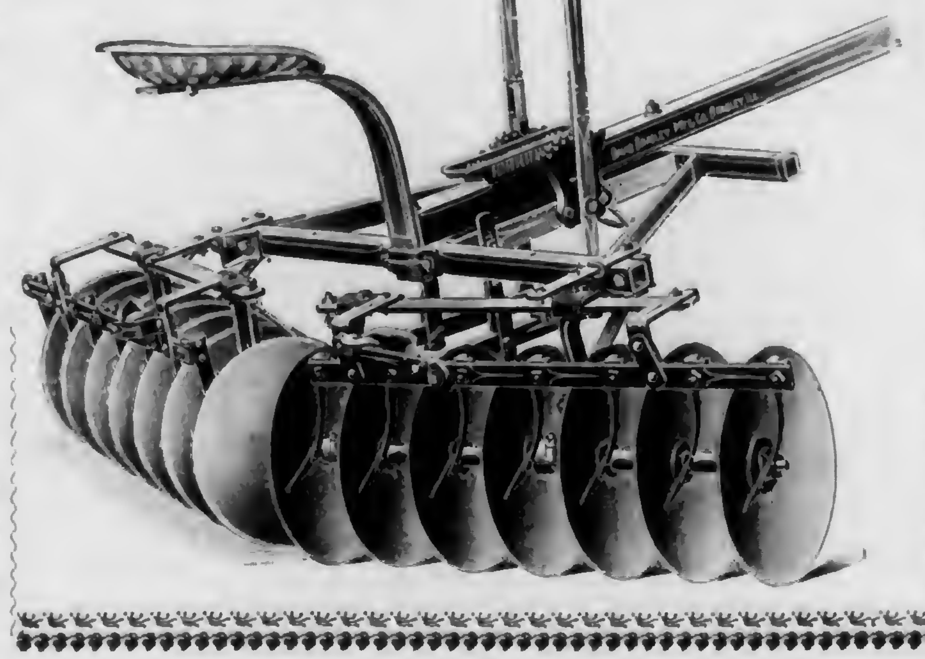

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SIZES—16, 18 or 20 in. disks.

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Equalizer and neck-yoke go with each harrow.

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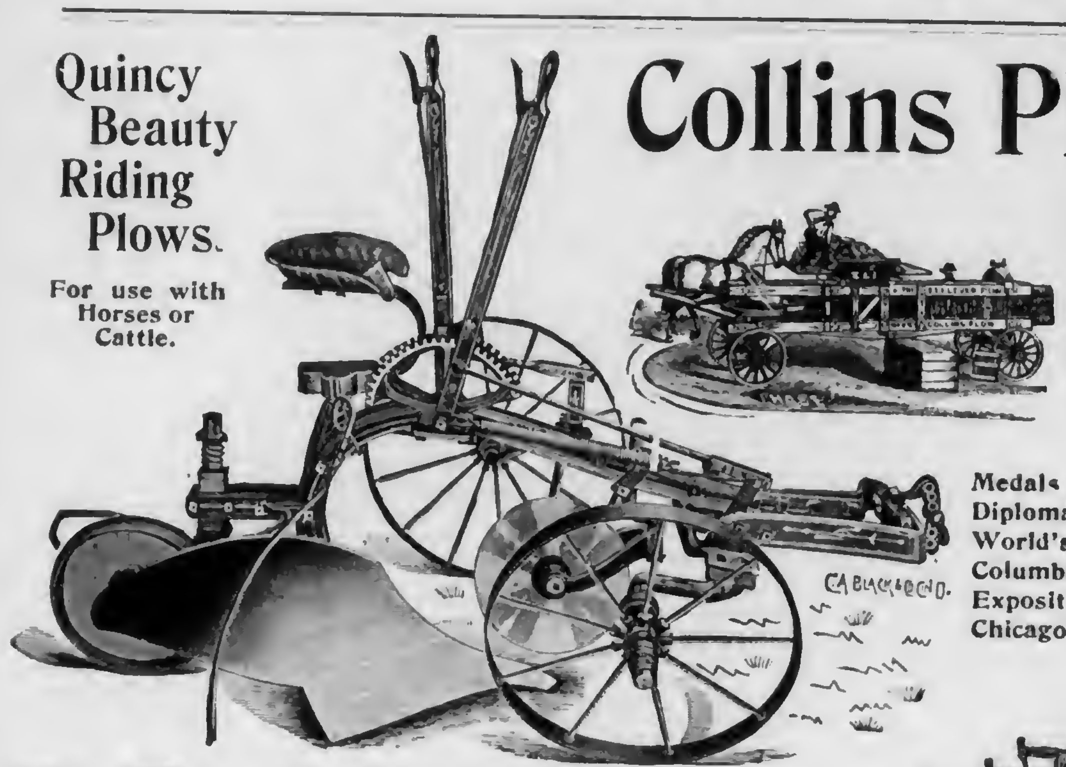
For use with Horses or Cattle.



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Medals and Diplomas World's Columbian Exposition, Chicago.

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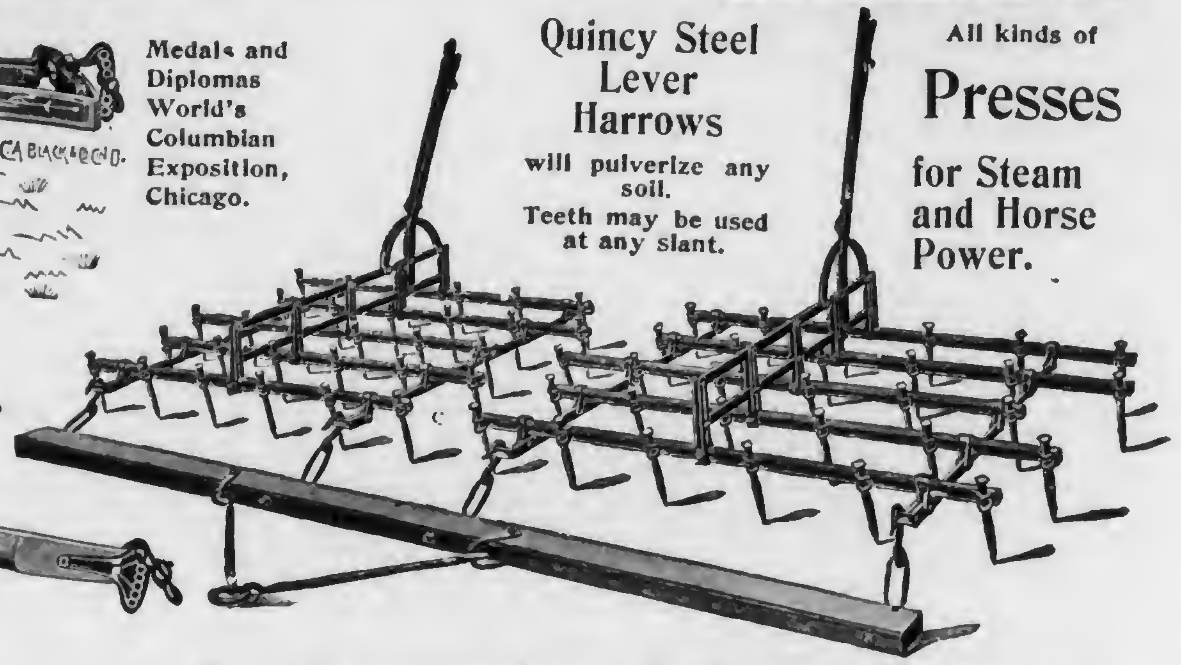
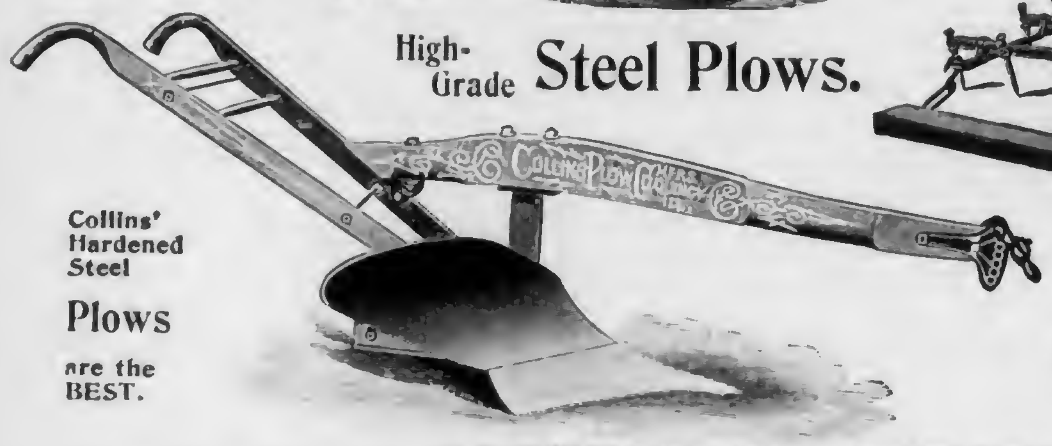
will pulverize any soil.

Teeth may be used at any slant.

All kinds of Presses for Steam and Horse Power.



High-Grade Steel Plows.



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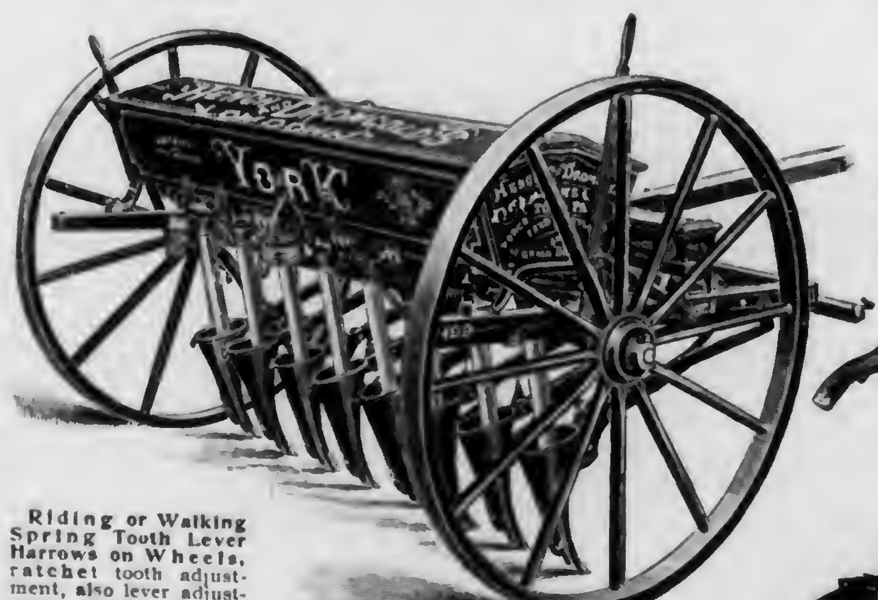

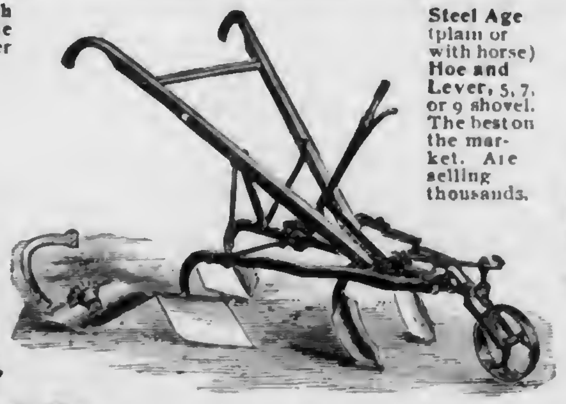

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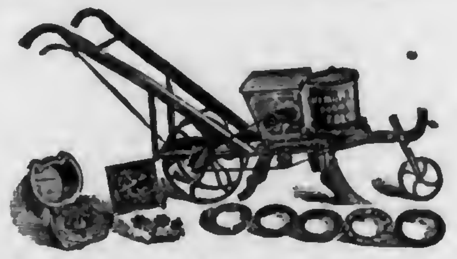

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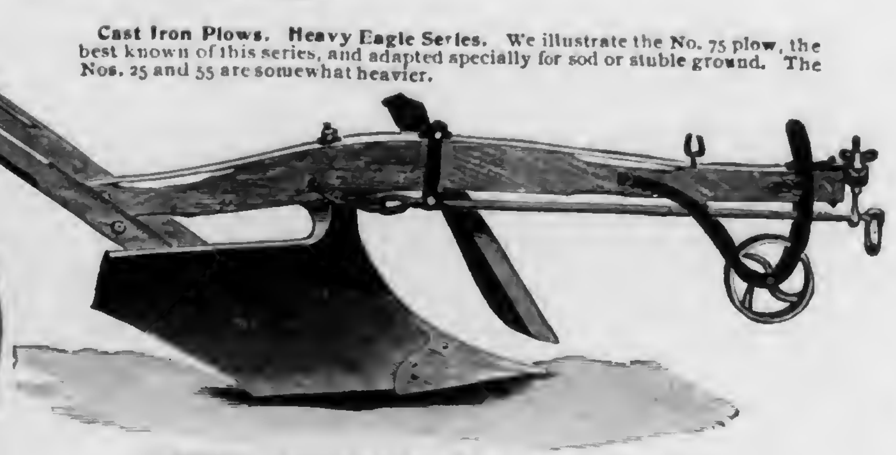

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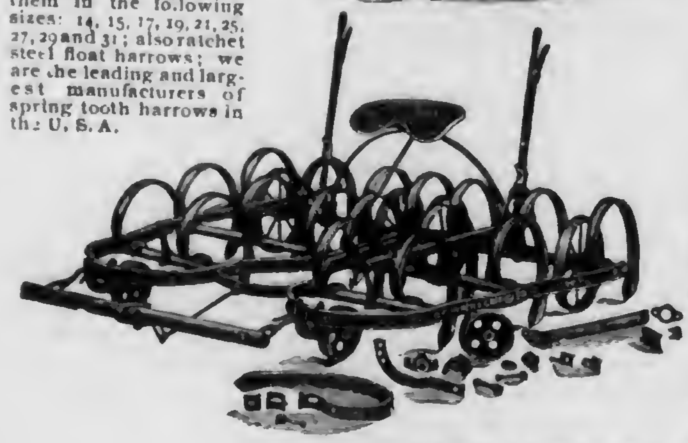

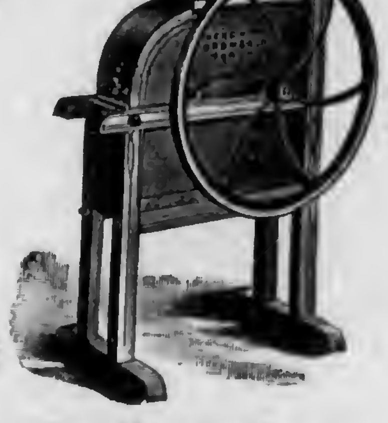

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7-inch,
8-inch,
9-inch,
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12-inch,
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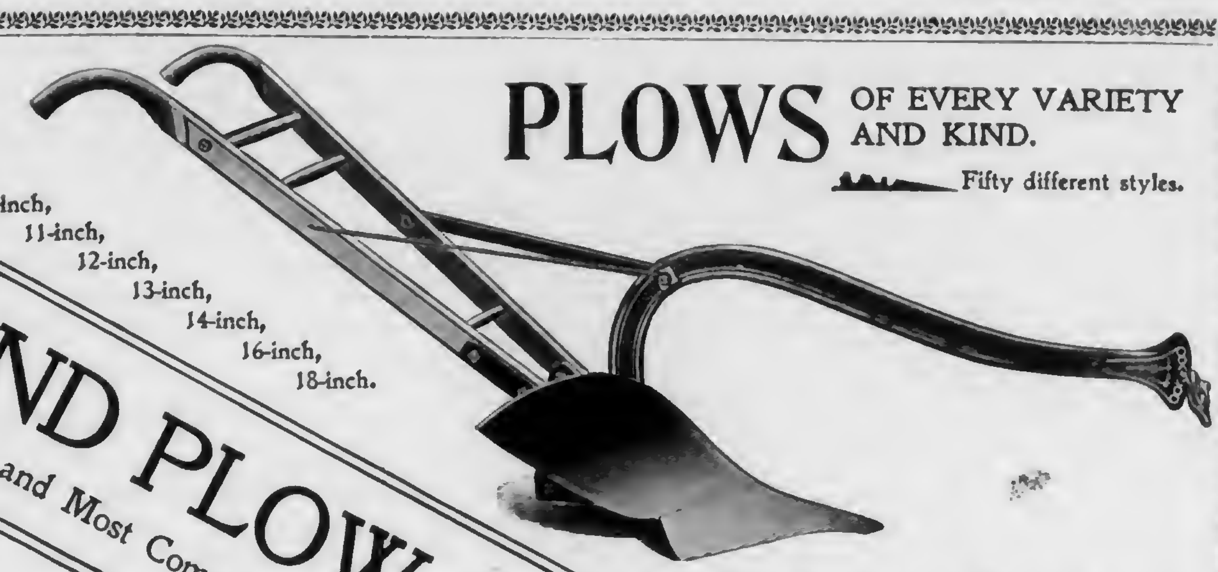

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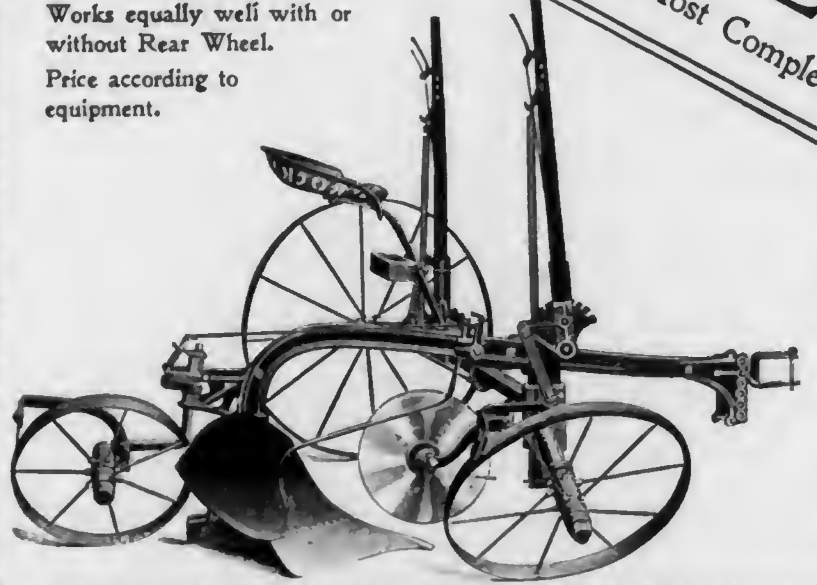

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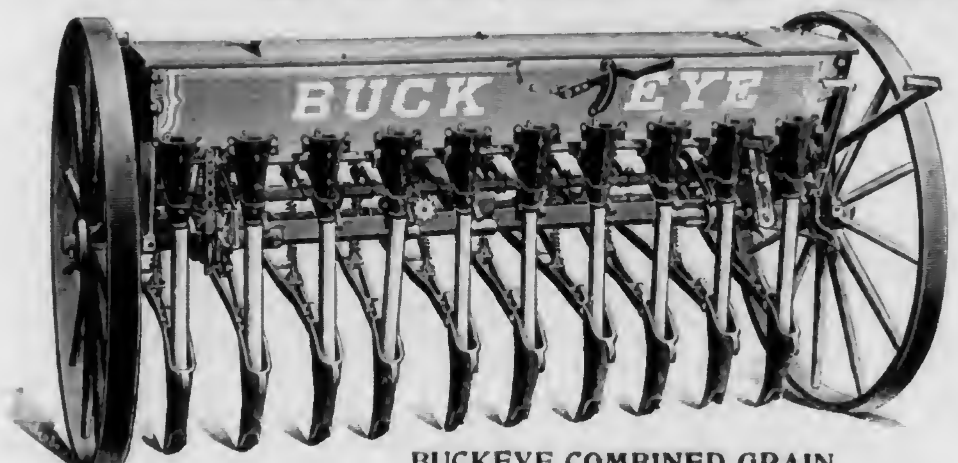

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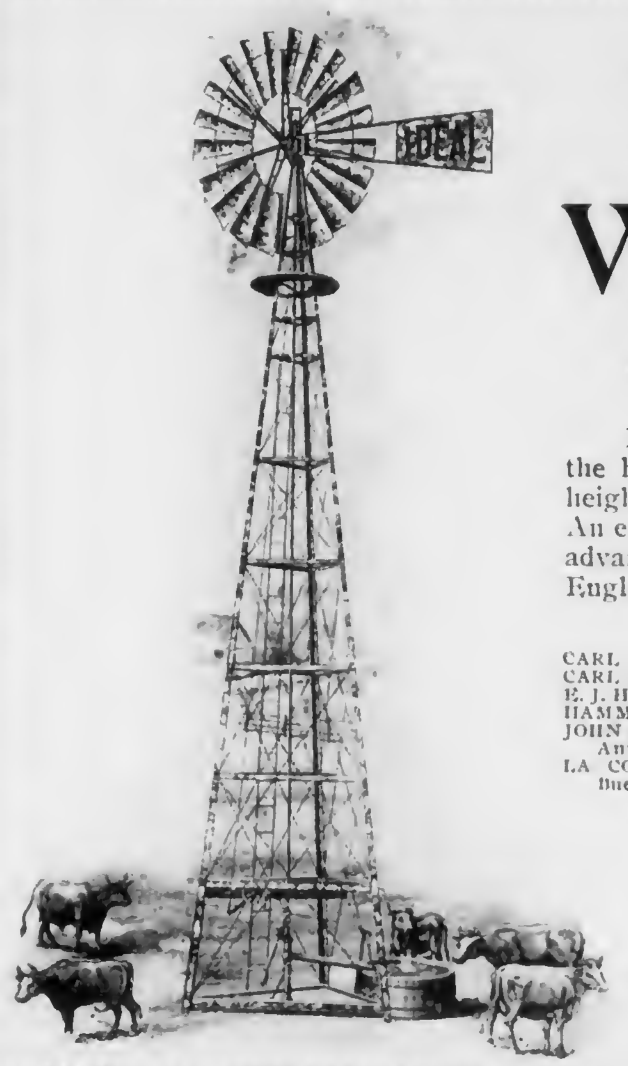

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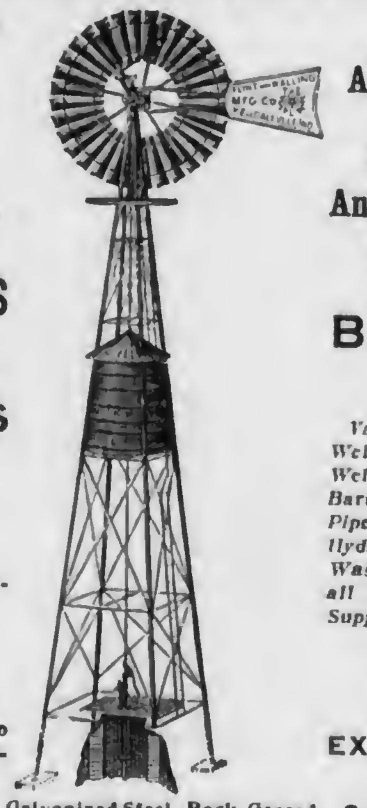

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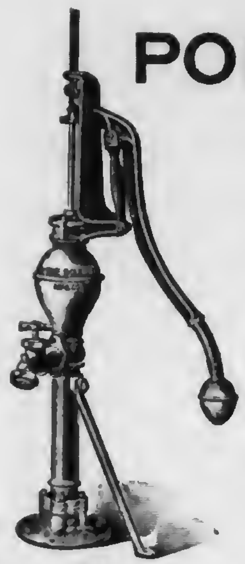

Fig. 1141.

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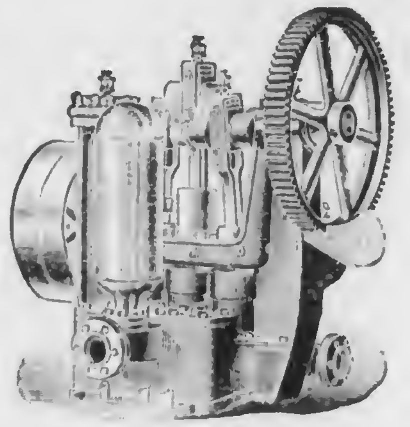
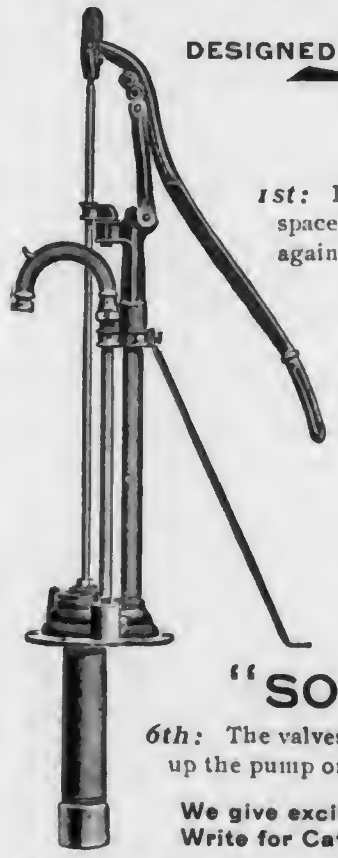


Pompe "Triplex" à moteur.

Red Jacket Force Pump



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6 POINTS 6

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3d: It is for hand or wind-mill use or can be used with other power by getting special connections.

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"SO EASY TO FIX"

6th: The valves can be taken up and fixed without taking up the pump or getting down in the well.

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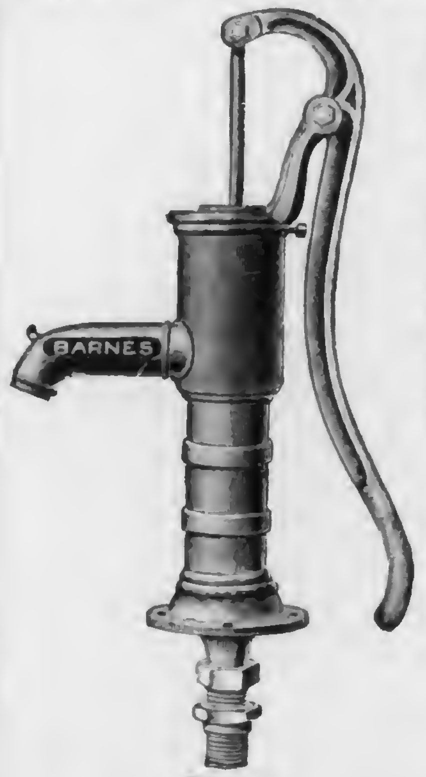

Fig. 107

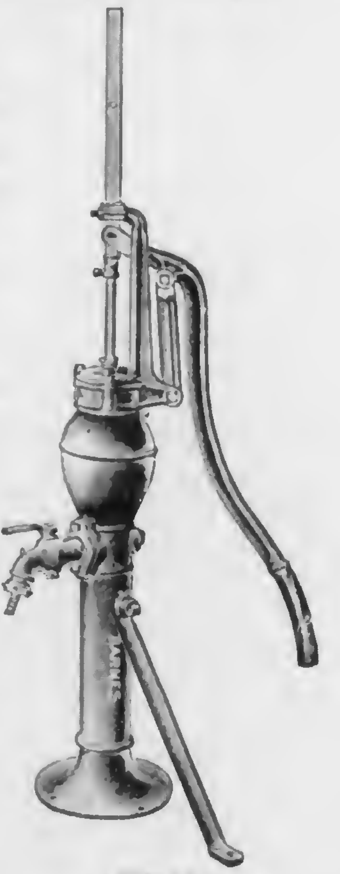

Fig. 551

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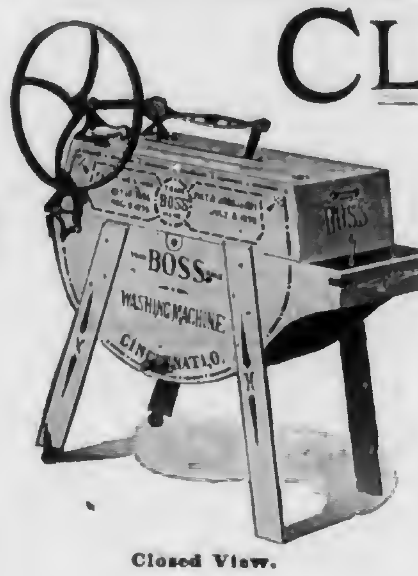

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This machine will perfectly cleanse clothes, and in less time, and absolutely not injurious to them, and with less labor than could be done by any other method.

We are desirous of establishing local agencies in all large cities, and with this end in view, solicit correspondence. Also write us for descriptive catalogue and price-list.

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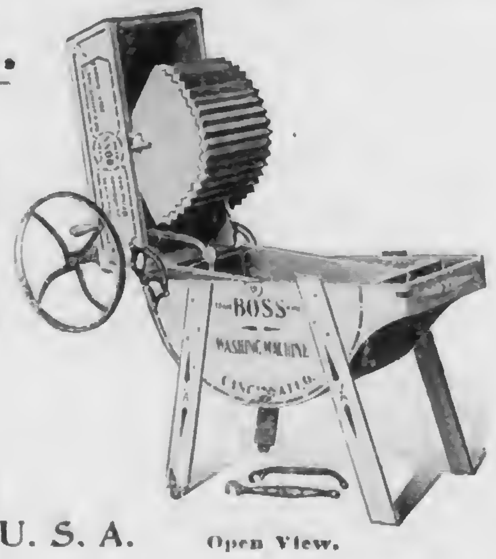

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Largely of Malleable Iron.

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Capacity, Speed, Durability and Simplicity

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It is sold on four continents.

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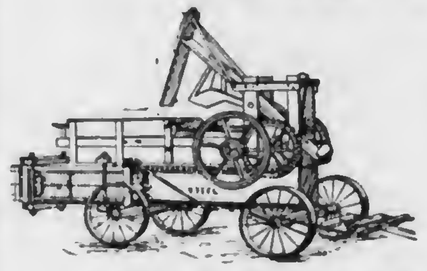

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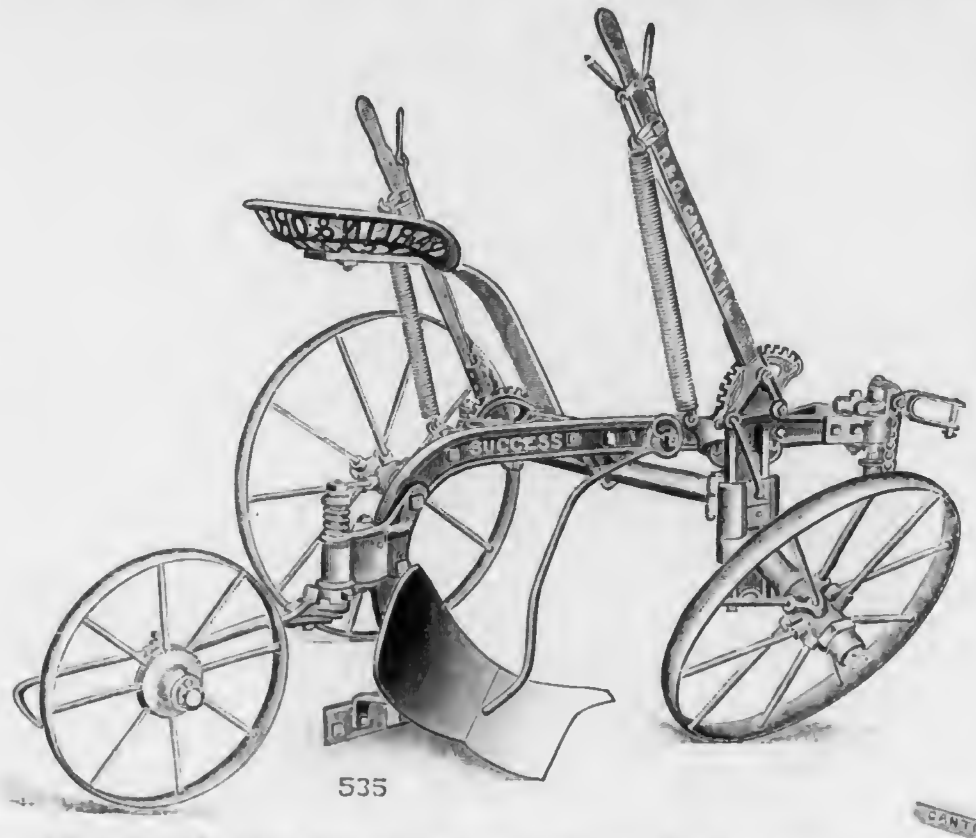

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P. & O. CO. SUCCESS PLOW

A model of simplicity. Light, strong and durable. Made right or left hand, in four sizes, 12, 14, 16 and 18 inch cut, with Scotch Clipper and Stubble bottoms. Equipped complete with Rolling Cutter and 3-horse evener.

The Success Plow is a popular plow in foreign countries, and is constructed on mechanical principles which make it adapted to soil in all sections. Has a double attachment on furrow wheel lever, doing the work of two levers on other styles of riding plows. An improved clevis which prevents the plow from being raised from the ground. Levers are all counter-balanced with springs. Side friction can be overcome by the adjustment of but one bolt. A splendid plow in every respect. **Write for Prices.**

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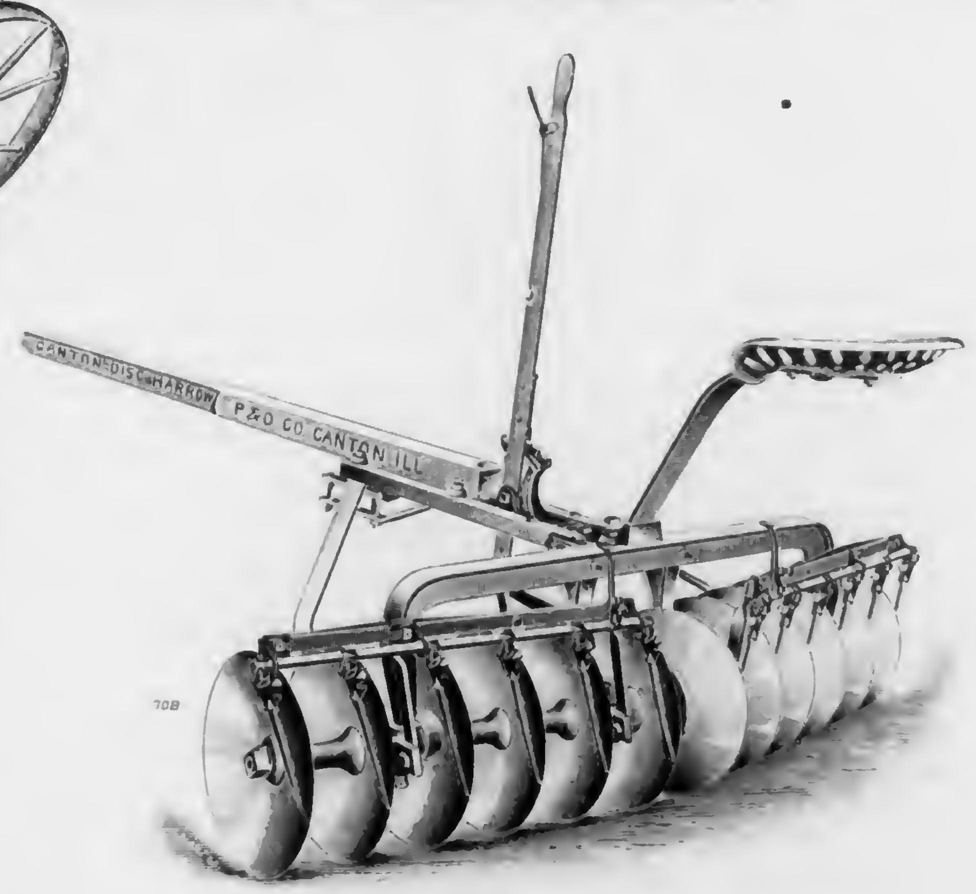
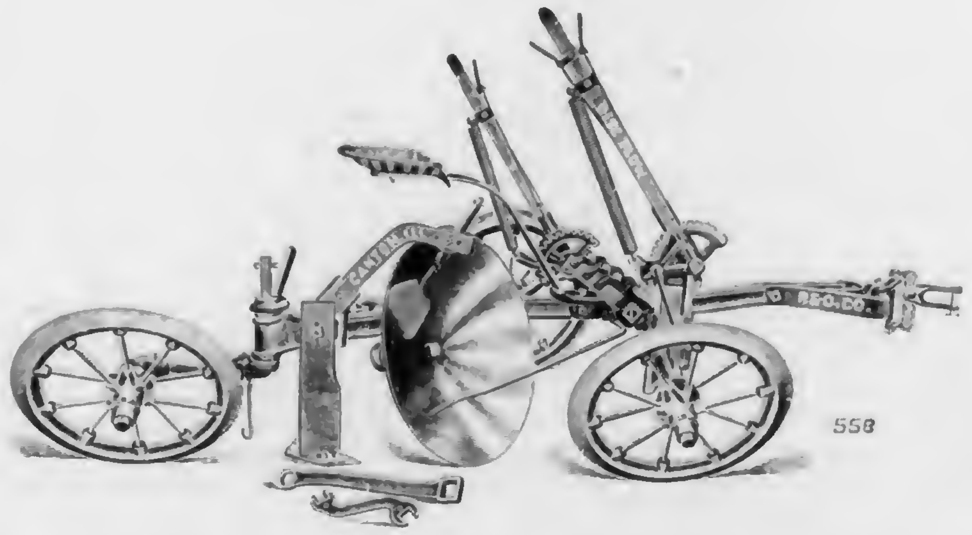
This well-known Disc Harrow is made in so many sizes that it can be used anywhere with comparative ease. The shape of the discs and the action of the scrapers, in addition to the adjustments by the lever which controls the gangs, allows a wide scope of work in any kind of soil.

This harrow is made with 16, 18 and 20 inch discs, with from 6 to 18 discs on a harrow. These sizes allow the cutting of a strip 4, 5, 6, 7 or 8 feet wide. **Write for Prices.**





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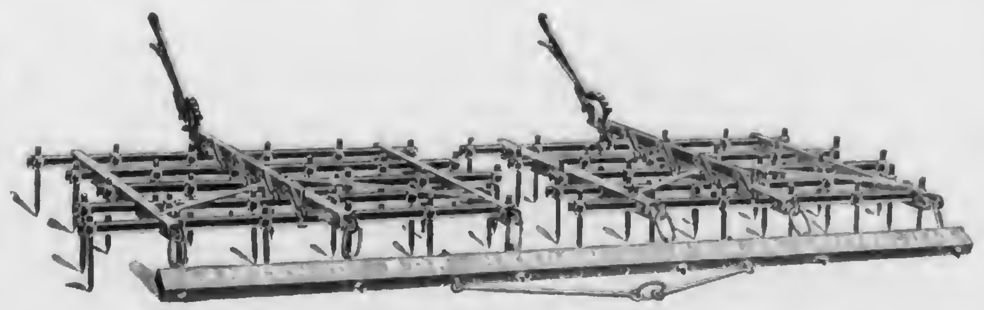
The P. & O. Co. Canton Disc Plow

The Canton Disc Plow has been the means of reclaiming land in many sections, for it will turn up the soil in ground when the ordinary mouldboarp plow will not scour. It is equipped with a 28-inch disc of such shape that the stickiest land can be completely turned under. The Standing Cutter back of the disc holds the plow in the ground and also cuts out the bottom of the furrow, leaving a square edge, which no other disc plow will do. The Canton Disc Plow is built with great care and with particular reference to strength and ease of operation. It is a well balanced and easy running plow.

Write for Prices.

P. & O. CO. CANTON "U" BAR LEVER HARROW

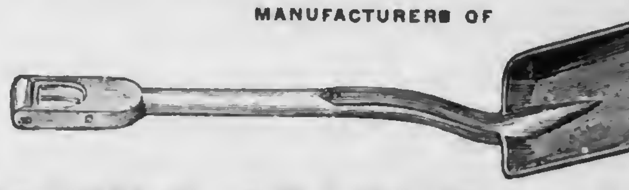
One of the strongest lever harrows on the market. It is made in two, three or four sections, with from 50 to 140 ½ inch square teeth. We also make a variety of harrows of this nature, with wood or steel frames, and with or without levers. **Write for Prices.**



PARLIN & ORENDORFF CO., CANTON, ILL., U. S. A.

T. ROWLAND'S SONS,

MANUFACTURERS OF



SHOVELS, SPADES and SCOOPS.

SOLD TO ALL PARTS OF THE WORLD.
WRITE FOR ILLUSTRATED CATALOGUE.

611 Bourse Building, Philadelphia, Pa., U.S.A.
Factory at Cheltenham, Montgomery Co., Penna.
Sole Export Agents: Messrs. C. K. Turner & Son, No. 76 Broad St., New York.

FORKS, HOES, RAKES, ETC.,

FOR EXPORT.

WE MAKE MORE THAN

740 kinds of Forks---350 kinds of Hoes---40 kinds of Garden Rakes

IN SIZES, PATTERNS AND GRADES **FOR ALL MARKETS OF THE WORLD.**

Works run continuously more than 45 years.

THE IOWA FARMING TOOL CO., Fort Madison, Iowa, U. S. A.
ILLUSTRATED CATALOG ON APPLICATION.

SHEBLE & KLEMM,

Manufacturers of

Farm and Garden Tools

Hay, Manure, Straw,
Barley, Spading
Beet or Turnip,
Coke, Coal, Stone,
Sluice Forks, etc.

FAIRMOUNT FORK WORKS.

Railroad Forks, etc.

Manure and Potato
Hooks, etc.
Steel and Malleable Iron
Rakes, etc.
Handles, etc., etc.

SOLD TO ALL PARTS OF THE WORLD.

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Factory: Frankford, Philadelphia, Pa., U.S.A.

EXPORT DEPARTMENT
operated for the past
FORTY YEARS.

ALL KINDS OF

HOES & RAKES

MANUFACTURED.

They are adapted to every condition and all countries.

SPECIAL SIZES AND STYLES
MADE TO ORDER.

Correspondence
Solicited.

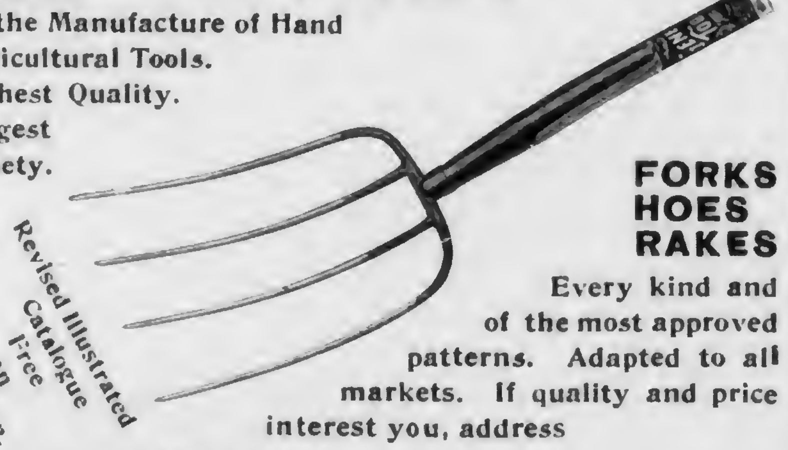
SMITH HARPER & SONS
PHILADELPHIA, PA., U. S. A.

THE WYOMING SHOVEL WORKS, WYOMING, PA., U.S.A., MANUFACTURERS,

SHOVELS **SPADES**

"GENEVA" leads, others follow

In the Manufacture of Hand
Agricultural Tools.
Highest Quality.
Largest
Variety.



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FORKS
HOES
RAKES

Every kind and of the most approved patterns. Adapted to all markets. If quality and price interest you, address

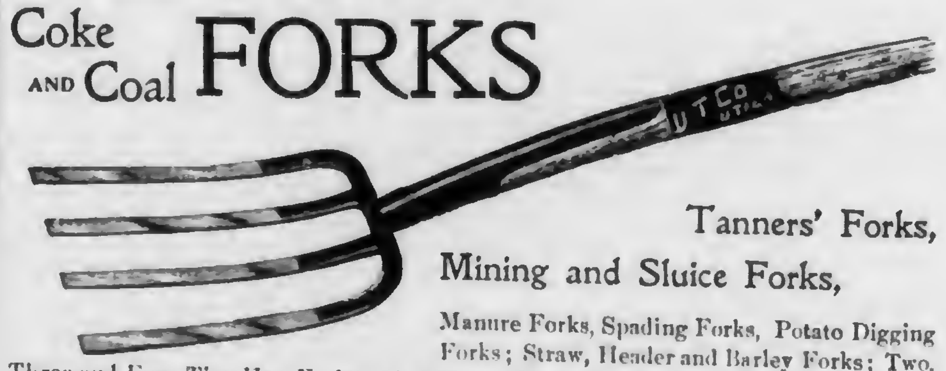
GENEVA TOOL COMPANY, Geneva, Ohio, U.S.A.

Utica Tool Co.,

UTICA, NEW YORK, U.S.A.

We Manufacture for Export all Kinds of

Coke and Coal FORKS



Tanners' Forks,
Mining and Sluice Forks,

Manure Forks, Spading Forks, Potato Digging Forks; Straw, Header and Barley Forks; Two, Three and Four Tine Hay Forks; all kinds of Hoes, Cast Steel and Malleable Garden Rakes, Potato and Manure Hooks.

Rakes, Hoes,
Hatchets, Etc.

Illustrated
Catalogue on
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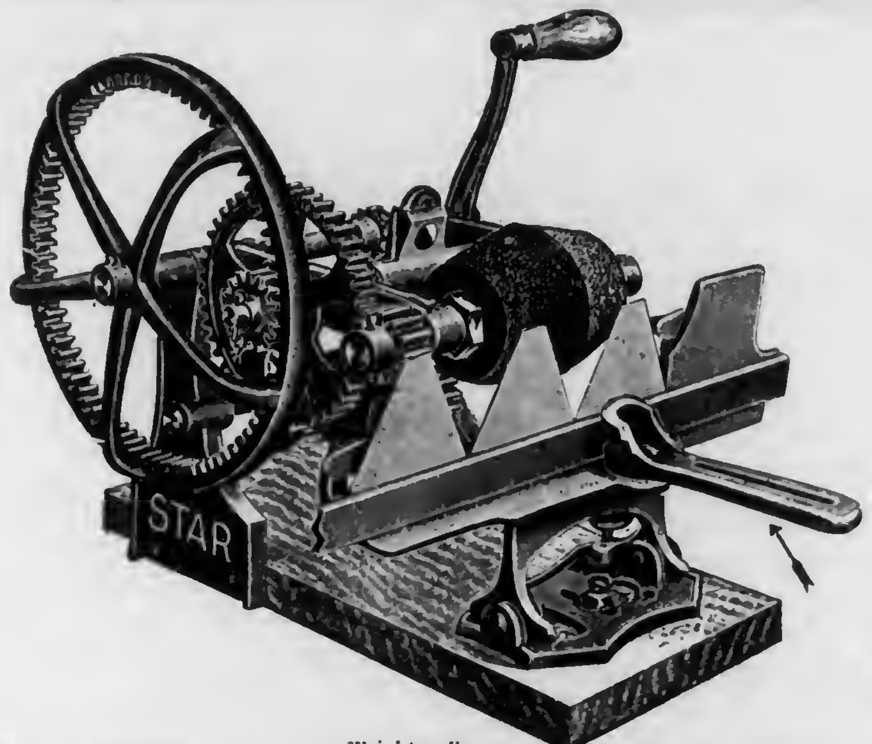
solicited.

Also......

High Grade Tested Coil and Cable Chain, Iron and Steel Forgings, Coal Mining Picks, etc.

JENKINS IRON AND TOOL COMPANY, Howard, Pa., U. S. A.



Weight 25 lbs

CLIZBE BROS.

* * * * AUTOMATIC * * * *

"Star" Sickle and Tool Grinder

Or MOWING MACHINE KNIFE GRINDER.

Grinds a perfect bevel on new or old knives, and positively cannot grind out heel, nor grind off the points.

Knives are set so you can see what you are doing. It grinds out the nicks.

It can be taken to the field with mower, works well on the ground, don't have to be fastened to wheel of mower.

Guaranteed to do good work when properly adjusted, and against breakage in transit. Stones are guaranteed for one year.

Our prices are cheaper than you can buy a so-called Sickle-Grinder for.

These machines are indorsed by all the leading Harvesting Machine Companies in the United States and Europe.

Write us and we will send you a handsome poster with full size cut of our Star Sickle and Tool Grinder, printed in four colors, and a catalogue and price-list of everything made in Emery Grinders and Emery Wheels.

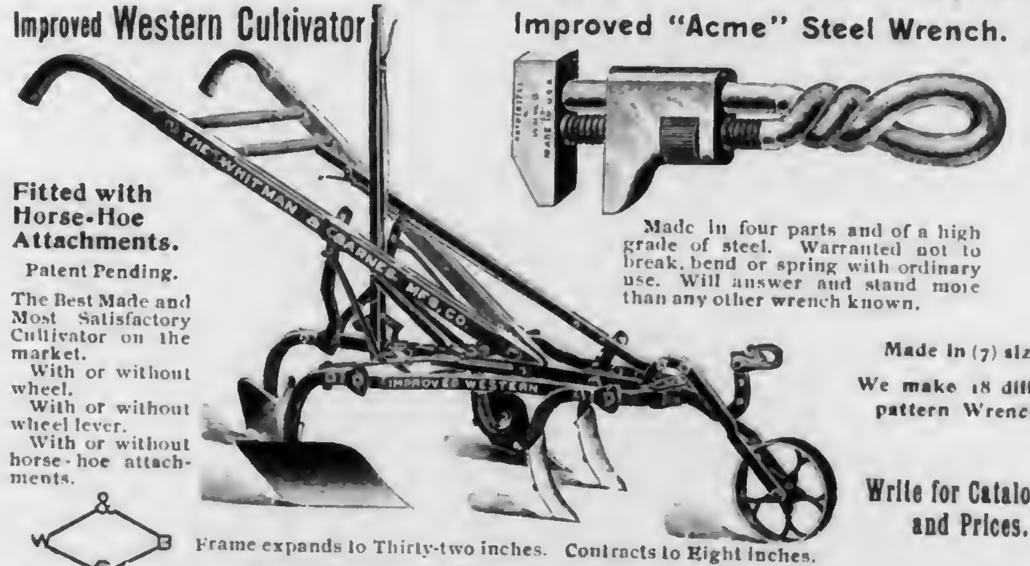
CLIZBE BROS. MFG. CO. PLYMOUTH, IND., U. S. A.

Established 1848. Established 1848.

THE WHITMAN & BARNES M'F'G CO.

Manufacturers of Mower Knives, Sections and Guards, Harrow and Thresher Teeth, Cultivators and Repair Parts, Lawn Mowers, Haying Tools, Hose, "Diamond" Knife Grinders, Grain-Drill Tubes, Link-Chain Belting, Binder Canvases and Covers, Agricultural Wrenches, Twist Drills, Files, Oil Cans, etc. A full line of Agricultural and Machinery Supplies.

Improved Western Cultivator



THE WHITMAN & BARNES MFG. CO.
IMPROVED WESTERN

Fitted with Horse-Hoe Attachments.

Patent Pending.

The Best Made and Most Satisfactory Cultivator on the market.

With or without wheel.

With or without wheel lever.

With or without horse-hoe attachments.

Frame expands to Thirty-two inches. Contracts to Eight inches.

Also, "Peerless," "Norka" and "Diamond" Cultivators.

Improved "Acme" Steel Wrench.

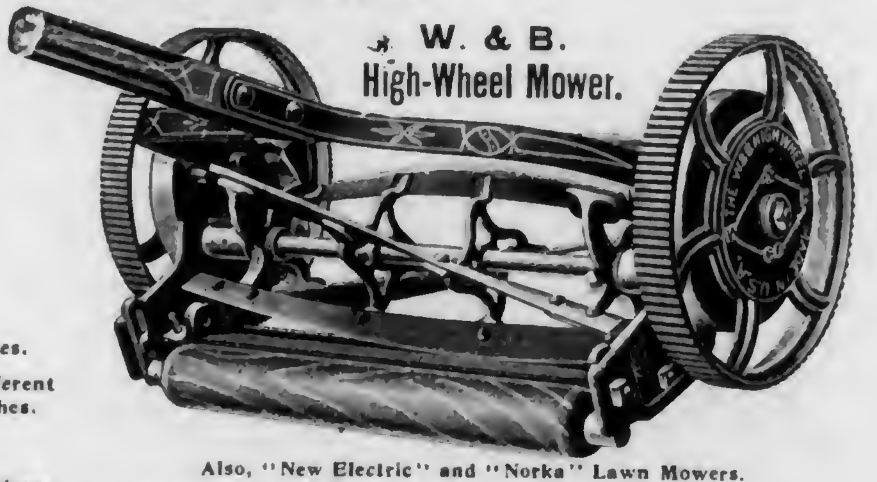
Made in four parts and of a high grade of steel. Warranted not to break, bend or spring with ordinary use. Will answer and stand more than any other wrench known.

Made in (7) sizes.

We make 18 different pattern Wrenches.

Write for Catalogues and Prices.

W. & B. High-Wheel Mower.

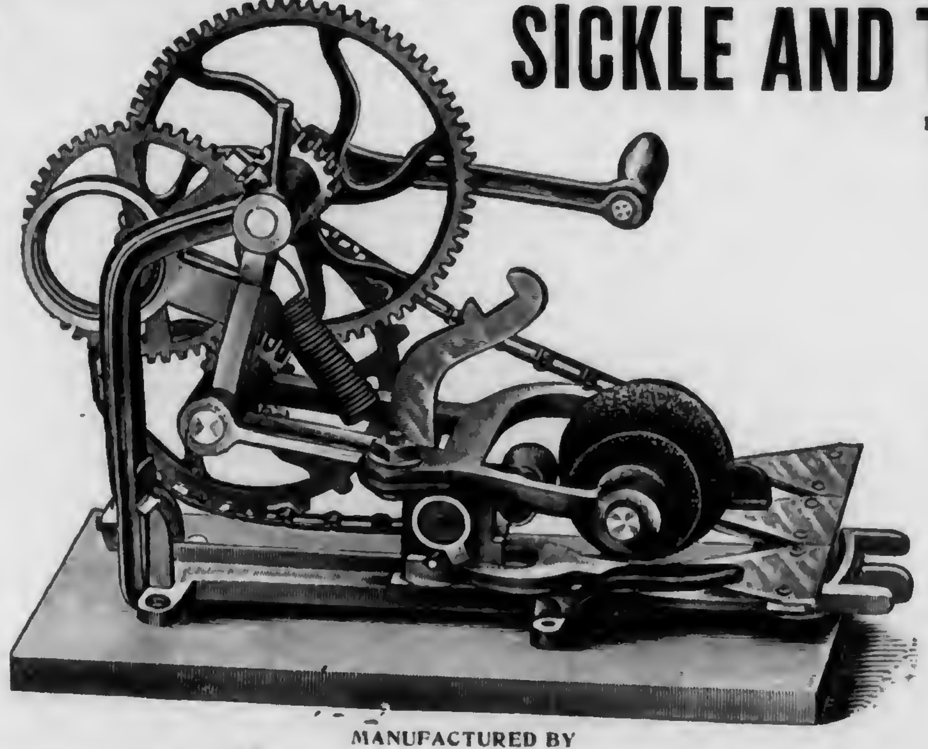


Also, "New Electric" and "Norka" Lawn Mowers.

HEADQUARTERS FOR EUROPE:
149 Queen Victoria St., London, E. C.
ADDRESS: 111 Chambers St., New York., U.S.A.

THE WESTERN SICKLE AND TOOL GRINDER.

Patented October 23, 1900.



PERFECTLY
AUTOMATIC.

Can be changed from an automatic to hand regulating in a moment.

GRINDS
SICKLES
PERFECTLY

from heel to point and from end to end.

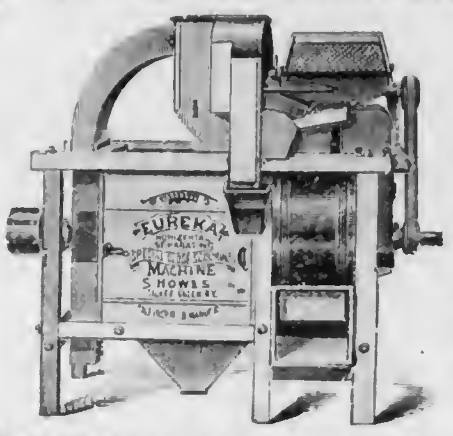
USES THE BEST
EMERY
WHEELS
MADE IN
AMERICA.

NEEDS NO
SKILLED
MECHANIC.

CAN BE
OPERATED
BY ANYBODY.

MANUFACTURED BY

Western Implement Co., Port Washington, Wis., U. S. A.

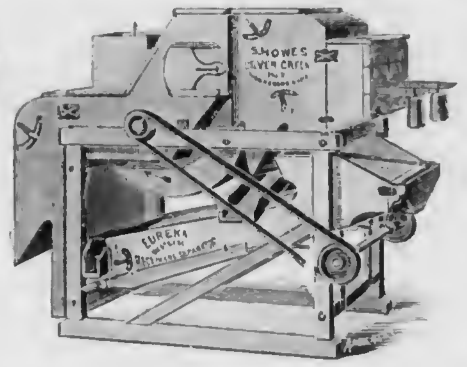


"EUREKA"

Grain, Coffee, Rice and Seed Cleaning Machinery.

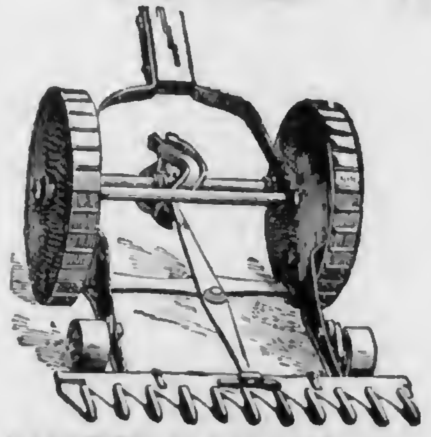
Horizontal and Upright Wheat Smutters.
Horizontal and Upright Brush Machines.
Seed Scourers and Separators.
Malt Graders and Separators.
Cockle and Barley Cylinders.
Wheat Washers and Dryers.
Bean Cleaners and Graders.
Brewers' Grain Packers.
Warehouse Separators.
Magnetic Separators.
Coffee Separators.
Coffee Polishers.
Coffee Hullers.
Spice Cleaners.

Milling Separator.
Rice Cleaners.
Corn Shellers.
Corn Cleaners.
Oat Clippers.
Fanning Mills.
Barley Separators.
Flour Packers.
Bran Packers.
Rice Graders.
Cement Packers.
Paint Packers.
Coffee Graders.
Rice Hullers.



THE S. HOWES CO., SILVER CREEK, N. Y.
EUREKA WORKS. ESTABLISHED 1856.

THE MOWER



THAT WILL
KILL ALL THE WEEDS
IN YOUR LAWNS.

If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear.

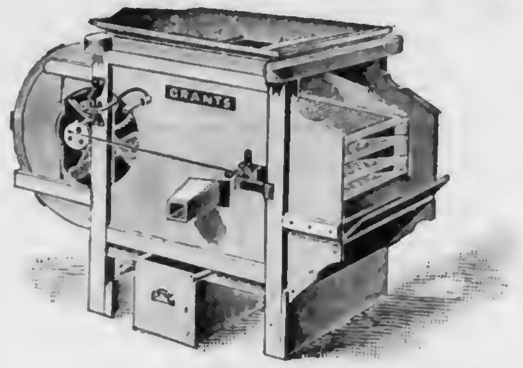
THE CLIPPER WILL DO IT.

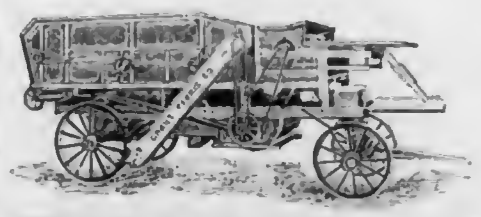
CLIPPER LAWN MOWER CO., Norristown, Pa., U. S. A.

Grant-Ferris Co.,

TROY, N.Y., U.S.A.
Established 1822.

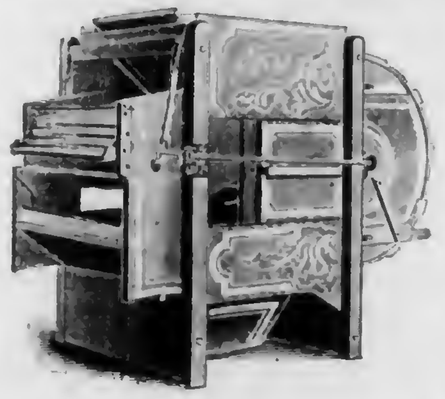
Manufacturers of
Peerless Threshing Machines,
Grant Fan Mills,
STRAIGHT STRAW RYE Threshers.





MILLS FOR CLEANING
COFFEE, RICE, COCHINEAL,
PIMENTO, etc.
Largest and Oldest Builders of
Fanning Mills
in the World.

The New Michael Fanning Mill



OUR MOTTO IS QUALITY.
ESTABLISHED 1858.

C. H. MICHAEL, Manufacturer of Fanning Mills exclusively.

Equipped with 9 sieves and screens, 2 zinc hurdles, a chess-board, tail-board and a spout, suitable for all requirements of a farmer.

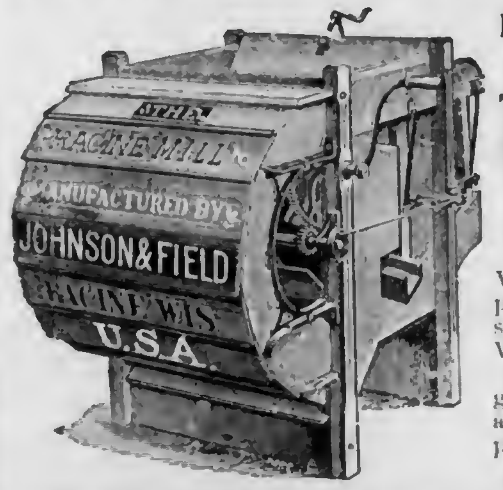
Size: 27 inches wide, 48 inches long and 48 inches high.

Knocked down and boxed with matched lumber for export, occupying a space of thirty cubic feet.

For further particulars address

C. H. MICHAEL, La Porte, Ind., U. S. A.

JOHNSON & FIELD MFG. CO.,



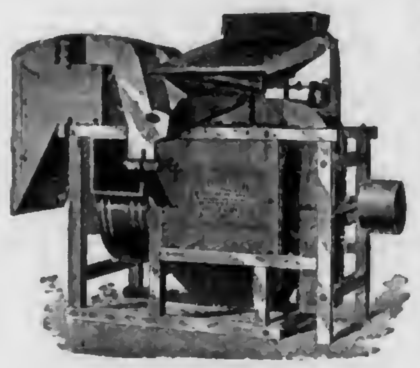
Racine, Wis., U.S.A.,
MANUFACTURERS OF
The "Racine"
Farm and Warehouse
FANNING MILLS.
FOR EXPORT TRADE

We pack three mills in each case, all parts carefully marked, total cubic space 45 feet, or 15 feet for each mill. We save you freight.

Made in six sizes for cleaning and grading wheat, barley, corn, oats, rye, and all kinds of grass seeds, beans, peas, rice, coffee, lentels, etc.

Write for prices and Catalogue.

MONITOR GRAIN, COFFEE, RICE AND SEED CLEANING MACHINERY

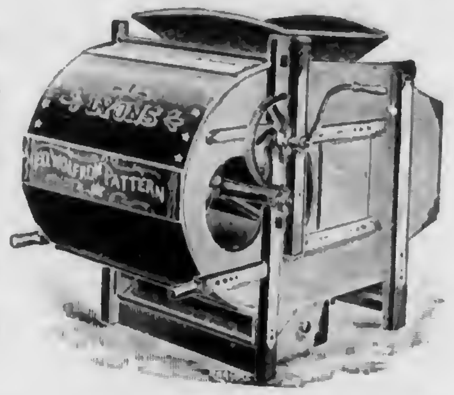


Wheat Scourers,
Wheat Separators,
Oat Clippers,
Flax and Linseed Separators,
Wheat Smutters,
Barley Scourers,
Barley Separators,
Seed Cleaners and Separators,
Fan Mills,
Corn Shellers,
Flour Packers,
Coffee Cleaners,
Coffee Separators and Graders,

Coffee Milling Machines,
Rice Graders and Separators,
Rough Rice Scourers,
Rough Rice Separators,
Malt Separators.

20,000 IN USE.

Used in All Countries of the World.



HUNTLEY MFG. CO., - Silver Creek, N.Y., U. S. A.

TRADE MARK.
AMERICAN STEEL & WIRE CO.
Universally Registered.

AMERICAN STEEL AND WIRE CO.

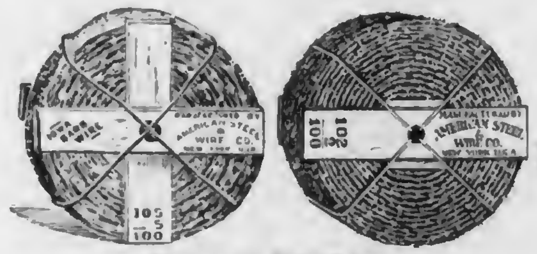
NEW YORK, U. S. A., 71 Broadway. LONDON, 29 Great St. Helens, London, E.C.

MAKERS OF BESSEMER, SIEMENS-MARTIN and CRUCIBLE STEEL

Largest manufacturers in the world of WIRE RODS; ANNEALED, GALVANIZED, COPPERED and TINNED WIRES for all purposes; PURE COPPER WIRES, INSULATED COPPER WIRES and CABLES of all kinds and sizes; IRON and STEEL HORSE SHOES; WIRE ROPES; FLAT and ROUND SPRINGS; BARBED WIRE; WIRE NAILS and STAPLES; WOVEN WIRE FENCING

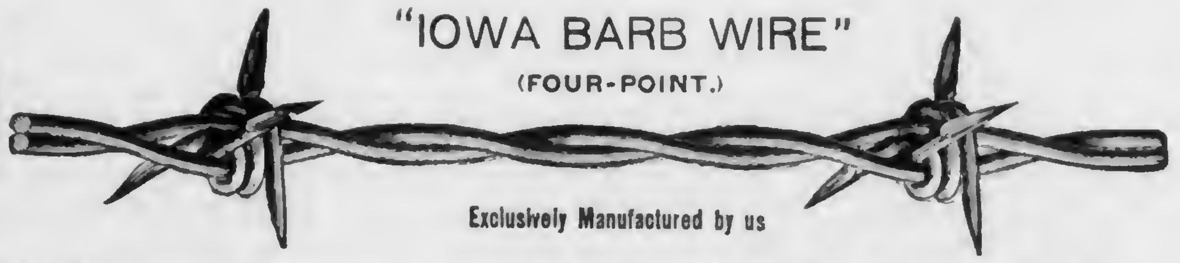
STEEL PLATES and SHEETS of every grade--STEEL BARS of all shapes.
STEEL AGRICULTURAL and MACHINERY SHAPES.

COLD DRAWN SHAFTING, HOMOGENEOUS STEEL, HOT ROLLED STEEL SHAFTING { ROUNDS, SQUARES, HEXAGONS FLATS AND ODD SHAPES.



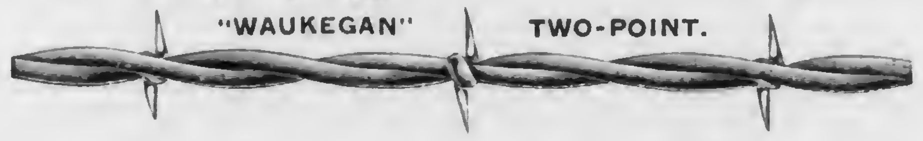
Styles of Packages.

"IOWA BARB WIRE"
(FOUR-POINT.)

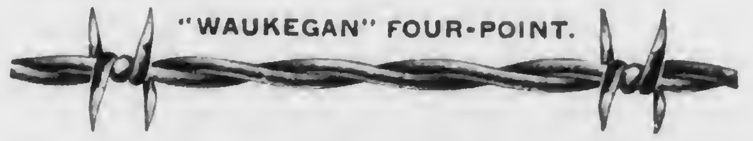


Exclusively Manufactured by us

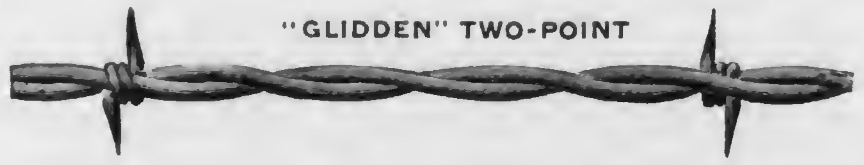
"WAUKEGAN" TWO-POINT.



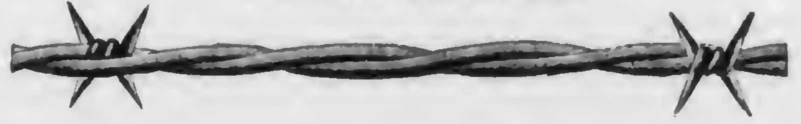
"WAUKEGAN" FOUR-POINT.

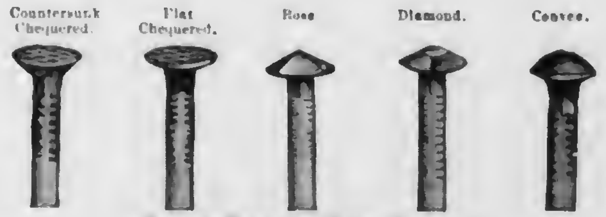


"GLIDDEN" TWO-POINT



"GLIDDEN" FOUR-POINT.



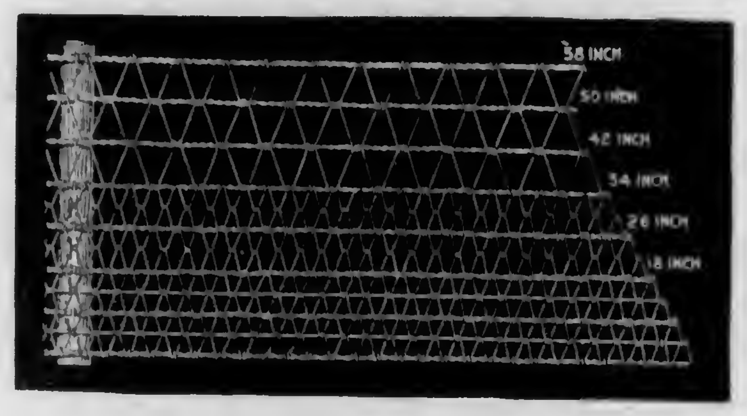


Some Special Nail Heads.

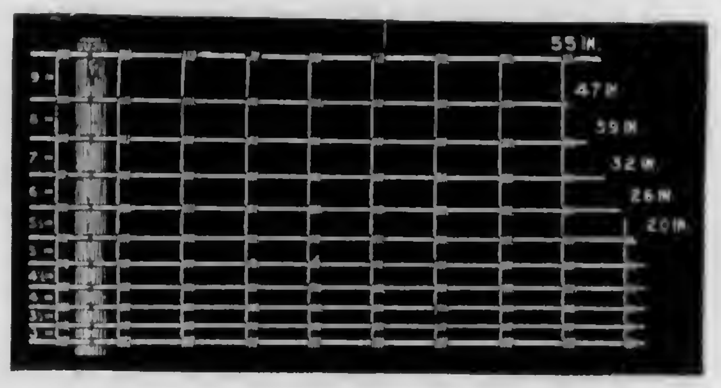
WIRE NAILS. Round, Oval or Square Wire.

Every Style of Head or Point. Our Nails are Guaranteed First-class in every respect, and will be found Stiffer, Stronger and Better made than European Nails. Packed in wooden kegs and cases, canvas bags and paper parcels of various sizes.

WOVEN WIRE FENCES. All made of Hard, Strong Steel Wires, heavily Galvanized.



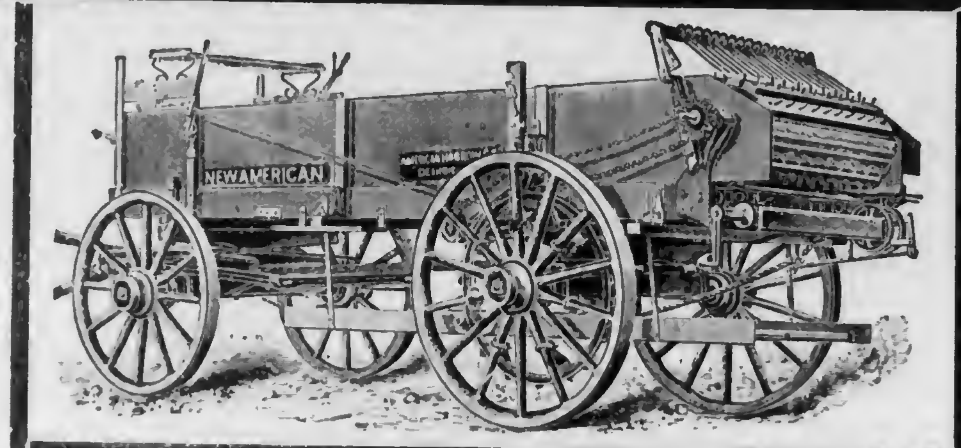
ELLWOOD Steel Fences—6 heights, 6 styles.



AMERICAN Field and Hog Fences—6 heights, stays 12 in. or 6 in. apart.

The wires in these fences are large enough for all ordinary requirements, the fences being cheap, durable and efficient—will last a lifetime. Put up in rolls of 20 and 40 rods—sold by the rod. Perfectly adapted to fencing railroad rights of way, farms, fields, orchards, vineyards, etc.

Write for prices, catalogues, etc., covering any of the above, to our offices at 71 Broadway, New York, U. S. A. 29 Great St. Helens, London, E. C. **AMERICAN STEEL AND WIRE CO.**



VICTOR HUGO said
that Paris wastes 5,000,000 francs a year through her sewers.

Or enough valuable fertilizer to enrich the whole soil of France.

Animal manure is Nature's most precious tonic for overworked land.

Then is it not foolish to spread it wastefully and improperly by hand? It covers less acreage; it is harmfully thick in spots, while neglectfully scant in other spots; it requires too much labor; it is slower work; the benefit is less.

The New American Manure Spreader

chops any manure into fine, medium or coarse bits, and spreads it precisely as thick or thin as wanted. You change the quantity while driving along. It is the only Spreader that can be regulated from first to last while operating and while you are on the seat.

You can buy our New American to fit your own wagon truck.

Or with any truck built.

Or with your own truck.

It's the Spreader of America. We want to make it the Spreader of Europe.

Send for Handsome Catalog.

Harrows, Cultivators, Discs, Planters, Bean Harvesters, Stalk Cutters, Seeders, Road Levelers and Bicycles.

AMERICAN HARROW COMPANY
DETROIT, MICH., U. S. A.

VICTOR HUGO dit
que Paris gaspille 5,000,000 francs par an qui passent par les égouts.

Ou bien assez d'engrais precieux pour enrichir le sol tout entier de la France.

L'engrais animal est le tonique le plus précieux de la Nature pour le sol surmené.

N'est-ce donc pas bête de le répandre à la main, d'une facon gaspilleuse et impropre? Il couvre ainsi un terrain moins grand; à certains endroits il est épais au point de nuire, et à d'autres il est par trop clairsemé; il faut trop de travail; c'est un travail trop lent; le bénéfice est moins grand.

Le Nouveau Distributeur D'Engrais Américain

hache l'engrais en morceaux fins, moyens ou gros, en le répartissant tout juste comme on le désire, épais ou en couches légères. Vous changez de quantité en avançant. C'est le seul Distributeur pouvant se régulariser d'un bout à l'autre de l'operation et pendant que vous restez assis sur votre siège.

Vous pouvez acheter notre "Nouvel Américain" de la taille de votre train de charrette.

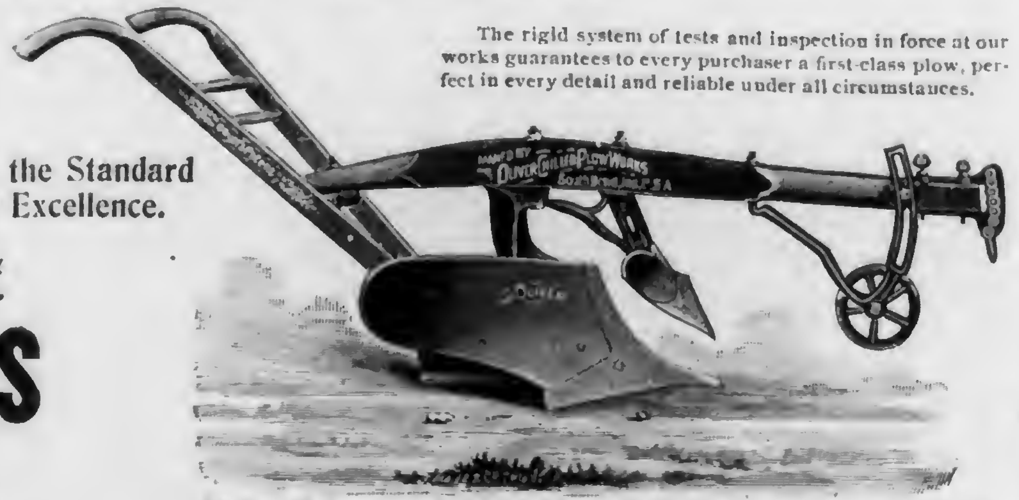
Ou pour un train de voiture quelconque.

Ou bien sur notre train à nous.

C'est le Distributeur de l'Amérique. Nous désirons qu'il devienne le Distributeur de l'Europe.

Demander le Beau Catalogue.

Herses, Cultivateurs, Disques, Planteuses, Moissonneuses de Haricots, Sécateurs tiges, Rouleaux niveleurs et Bicyclettes.



The Name "OLIVER" is a Guarantee of Excellence.

The Immense Factory Owned and Operated by

The Oliver Chilled Plow Works

Continues as Usual to Turn Out the Best Plows Made.

Europe, Asia, Africa, Australia, North and South America, and the Islands of the Sea compliment us by using our

WORLD RENOWNED CHILLED PLOWS.

And at Home and Abroad **THE OLIVER** Is the Standard of Excellence.

Our large and varied assortment provides for the most exacting style of plowing, and from the easiest to the most difficult soils.

Oliver Chilled PLOWS

Are the Best on Earth.

The rigid system of tests and inspection in force at our works guarantees to every purchaser a first-class plow, perfect in every detail and reliable under all circumstances.

The No. 40 Series Full Chilled Sloping Landside. Wood and Steel Beam.

Nos. 98 and 99 Oliver Steel or Wood Beam Combination Plow. With Reversible Point and Wing. Self-sharpening by use.

Our business has grown from 1,500 plows in 1873 to an annual output of more than 200,000 plows, and we have

The Largest Distinctive Plow Works in the World.

Oliver Chilled Plow Works,
South Bend, Indiana, U. S. A.

EXPORT IMPLEMENT AGE.

Vol. III. Philadelphia, Pa., U. S. A., January, 1901. No. 4.

AN EXPORT RECORD.

Merchandise Sent Abroad This Year is an Immense Amount.

October exports have broken all monthly records in the history of the commerce of the United States, and the ten months of 1900 ending with October also break the record of exports for the corresponding period of preceding years and give assurance that the calendar year 1900 will show the largest exports in the history of our foreign commerce.

The total exports during the month of October, as shown by the records of the Treasury Bureau of Statistics, were $163,093,597, or practically double the exports of October, 1894, when they were $83,653,121. The total for the ten months ending with October, 1900, is $1,194,775,205, or practically double that of the ten months ending with October, 1894. Exports exceeded imports during the ten months ending with October by practically $500,000,000, or to be exact, $499,667,936; while in the corresponding ten months of 1894 imports exceeded exports by $96,663,369.

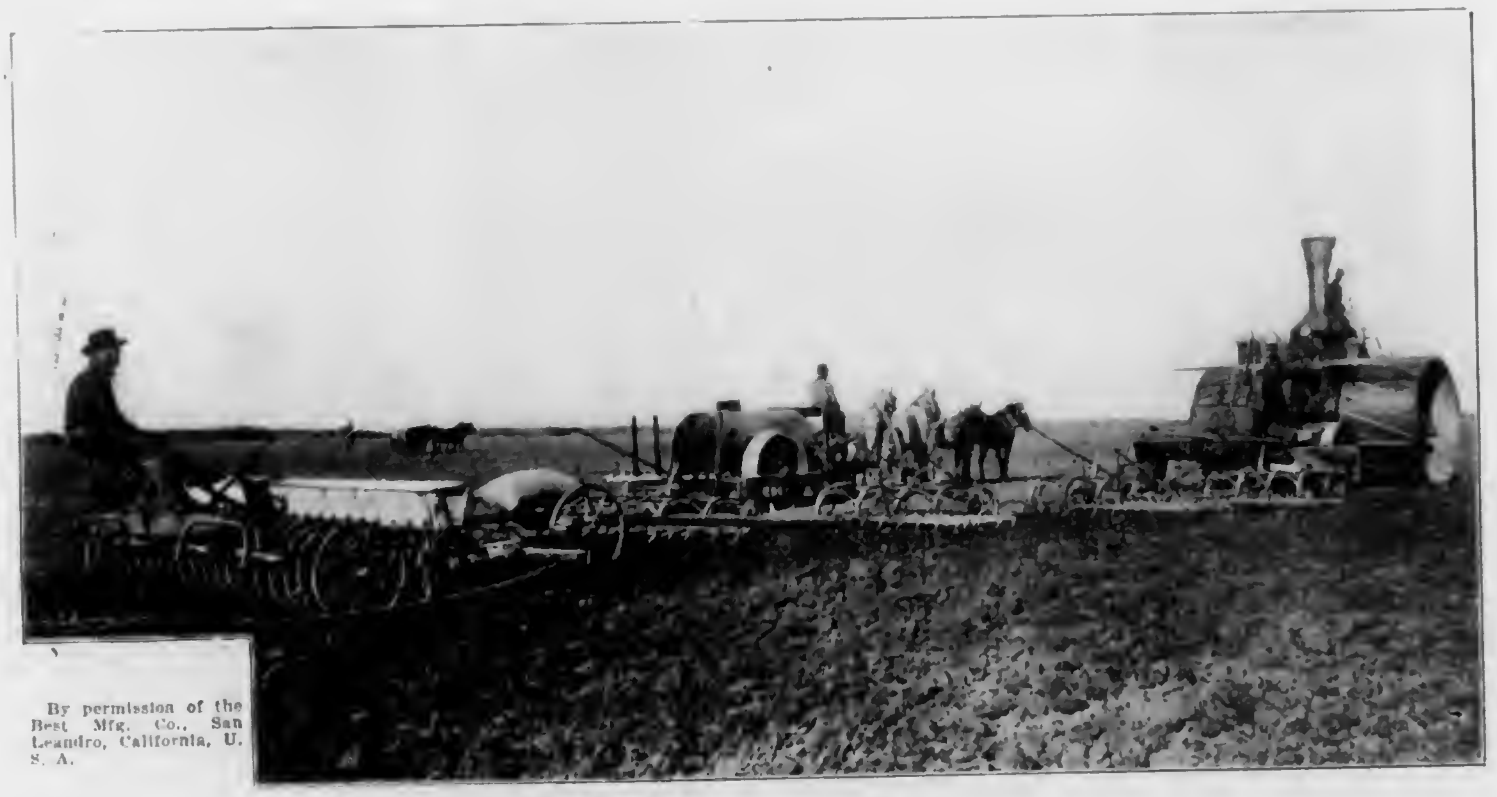
The year 1900 will, for the first time in the history of our commerce, show an export of more than $100,000,000 value in every month in the year, while for the first time a single month—October, 1900—passes the $150,000,000 line, being, as already stated, $163,093,597, against the highest preceding record of $134,157,225, which was made in March, 1900.

Agriculture, mining and manufactures have jointly contributed to this enormous increase in our export business. The details of the tenth month of the year, October, have not yet been completed, but those for the nine months ending with September show that agricultural exports are $50,000,000 greater in 1900 than in 1899; manufactures, $60,000,000 greater; products of the mine, $7,000,000 in excess of the corresponding months of the preceding year, and products of the forest $5,000,000 greater than in the nine months of 1899.

It is especially in raw cotton and manufactured iron and steel, however, the greatest growth is shown. Exports of cotton in the single month of October amounted to over $60,000,000, against $28,000,000 in October, 1899, $30,000,000 in October, 1898, and $32,000,000 in October, 1897. Manufactures of iron and steel show for the nine months ending with September (October details not yet being available) $97,313,060, against $76,569,205 in the corresponding months of 1899, $59,990,665 in the corresponding months of 1898, and $45,693,384 in the corresponding months of 1897, having thus more than doubled in three years' time.

The following table shows the exports in each month of the year 1900, comparing the same with those of the corresponding months of 1894:

	1894	1900.
January	$85,940,226	$117,597,158
February	65,175,321	119,426,985
March	70,640,839	134,157,225
April	64,124,812	118,772,580
May	61,043,583	113,427,849
June	57,504,487	108,651,957
July	52,614,176	100,441,793
August	60,776,147	103,576,654
September	58,798,675	115,629,417
October	83,653,121	163,093,597



By permission of the Best Mfg. Co., San Leandro, California, U. S. A.

A MAMMOTH MACHINE.

Plowing, harrowing and seeding wheat at one operation in California, United States. This machine has sixteen 10-inch plows, four 6-foot harrows, and one 14-foot grain seeding drill. The wheels on the traction engine are 60 inches (5 feet) wide and 8 feet high.

MECHANICAL SUPERIORITY.

A Triumph of American Skill at the Paris Exposition.

Speaking of the American exhibit of tools, etc., at the Paris World's Fair, the London "Chronicle" says this exhibit "was incomparably finer than the British, and even there their great superiority in the very small tools was not fully brought out. It is useless to urge that Great Britain was poorly represented, for it would be difficult to find the materials in England to make a good show. There are at least four firms in America making a specialty of small, accurate measuring appliances, and, so far as we know, there is not one in England making them systematically at all."

AMERICAN MAIZE.

The Most Desirable of All Foods for Fattening Live Animals.

We illustrate two herds, one of cattle and one of hogs, which were fattened for market in the great maize belt of the State of Illinois, United States. These animals are not represented as specimens of pure breeds, but grades only. They are not breeding animals, but intended for market. The steers were fed from birth on grass, hay and maize, the fattening being hastened by additional rations of maize. The hogs are grade Poland-Climas, fattened in the pen on maize. Maize (known as "corn" in America), is considered superior to all other foods in America, and the annual crop produced is nearly 2,000,000,000 bushels, equal to about 43,000,000 quintals. It grows in every State and over a wide territory. The maize crop is often more than four or five times as great as that of wheat, and it is used not only for cattle and swine, but also for horses sheep and poultry, as well as on the tables of the farmers.

Maize Fed Cattle—United States.

AMERICA'S INFLUENCE.

Europe is destined to be industrialized on American lines. Europeans have been pouring into America since the dawn of the century. First Ireland, then came English, Scotch, Welsh, Germans and latterly the Huns, Poles and Italians, and the end is not yet. Even China reached out her gaunt arm and flung a quarter or half a million of her sons onto our Western shores, but we became alarmed, and with a legislative stick we compelled her to keep her people at home.

But why must all these lands, especially European lands, send their people here? Does not the sun shine, the rains fall, and the seasons come and go in Europe as here?

We must go there. America, lusty in strength, powerful in resources, abounding in energy and enterprise, broadened in intelligence, and enlightened in the comprehension of things and skillful with its fingers to manipulate raw material into things of use and comfort, possesses a wealth of agencies that now enables it to go back to the Old World from whence it came and carry to its people the ideas and methods which lead to real independence, to physical comfort, to broader intelligence, and to a citizenship which is the embodiment of abiding sovereignty, against which oppression cannot succeed.

This is no word-picture. The time is here and the field is open for America and Americans to go back to the Old World with her tools, machines and implements, and labor-encouraging and labor-saving devices, to encourage her people to turn their backs on the past and to look forward to the future which we hold up.

Let the immigrants continue to come, but let our commercial pioneers go, with all we can send with them, to encourage Europeans to adopt our methods and ways, our implements and instruments, our tools and our machines, that they may have more food, more and better clothing, better houses, and more money and heart to go to and fro beyond the hills which have been the limits of their little world for generations.

America has an opportunity but a greater duty to perform during the coming years and decades in industrializing Europe, in teaching European farmers how to farm, in instructing her mechanics in the use of our machinery, and in enabling her people to earn in a day the wealth they now laboriously gather in a week.

CHEAPNESS RATHER THAN QUALITY.

Dealers who believe in a fair profit will be interested in the following from the Sydney "Hardwareman," as it applies to all countries and well portrays human nature and the lines which should be followed in the trade:

"That this is the rule, rather than the exception, in the colonial retail trade, is a matter of regret, and is more accentuated by the keen competition in retail lines, introduced to a large extent by the draper cum-ironmonger method of doing business. These traders, in the first instance, introduced this shoddy class of business as catch lines, but, unfortunately, the genuine ironmonger was too willing to follow the lead, and the average stock of the suburban ironmonger nowadays comprises tinware that is a miracle of lightness, E.P. ware, with such a light deposit of silver as to barely cover the naked base; table cutlery, on which the makers will stamp anything but their own names; locks, with outside appearance only, and without a single piece of wrought work about the interior, or necessary parts; brushware without a particle of hair about it, and many other lines of like nature. It is an open question as to whether the fault lies with the buyer or the seller. Undoubtedly there is a preponderance of buyers who are penny wise and pound foolish, and seek this class of purchase. The seller is largely the defaulter; first, for catering for this class of trade by a system of trying to undersell the "other man," thus leading to a sacrifice in quality, in order to shade the price, but still more because of the general practice of the salesman to push a sale by emphasizing the cheapness, rather than endeavor to secure the trade and custom by explaining in a practical and intelligent way the advantage and utility of buying a good, serviceable, instead of a merely cheap article. This is a fault that has grown to a large extent of late years, owing to the introduction of cheap, immature salesmen, who, being merely lads, with a smattering of ironmongery, have not a knowledge of their trade sufficient to encourage them to display to the best advantage the points and value of an article to a likely buyer, so that he might be impressed with its use and value before he asked the price. It is beyond doubt that a good salesman who knows his business can sell a good article at a fair profit, where another employed principally for the low salary he accepts will either lose the customer or be satisfied to sell him the cheapest thing he can, as it means least trouble. This state of things will also apply to many of the larger city shops which run a retail department. In the matter of assistants behind the counter, and about the warehouse also, they seem to have retrograded, and employ as many youths in positions where, not many years ago, men of the best knowledge and mature experience only would be placed. To cultivate a good trade you must employ good salesmen, pay them salaries in accord, and it will correspondingly pay the employer. Encourage your employés to read their trade journal, and you will soon find your trade increase (and your profits also), and the useless 'clothes line and billycan for 3d.' style of business will soon cease.'

What is stated above applies to a certain extent to the implement industry. The dealer who builds up a reputation for fair dealing and who states to his customers the truth, and the whole truth, may find his work somewhat hard for awhile, but sooner or later things will come his way and it will then be difficult to dislodge him from his fortified position. Honesty and integrity will force their way to the front. It may take time, but fair dealing is sure to advertise itself.

CROP OF NEW SOUTH WALES.

The Colonial Government reports that 1,563,060 acres of land in New South Wales are under wheat cultivation and that the total yield ought to be 16,000,000 bushels.

FARM MACHINERY IN AGRICULTURE.

An interesting and instructive discussion of the influence of farm machinery on cost and production of agricultural products and on labor appears in the "Country Gentleman," from Mr. J. R. Dodge, of Washington, D. C., who states that agricultural implements and farm machinery have played an important part in United States agriculture. Really that part has been dominant, paramount. This may seem to our farmers, so familiar with their use, a trite saying, yet there are evidences that the full importance of their influence is not fully realized. Could they go back to the conditions of 1850 for one season, how vivid would become that realization—how drudgery has been relieved, labor rendered more effective, production cheapened. Our implements are more varied and effective than those of any other country in the world, and hence our ability to supply liberally the wants of an increasing population, and to compete with other countries in a surplus that is enriching the country and making it the creditor nation of the world.

Mr. Dodge states that these implements are lighter than those of foreign make, of greater strength in proportion to weight, and remarkable for ingenious adaptation to specific uses and labor-saving. These qualities secure premiums in contests with English and German machines, and cause heavy exportation to all civilized countries of the globe, which furnishes the best proof of these statements and the best international test of their efficiency. More than twenty countries are specially named in the present official export record, and many others are included in the miscellaneous classification, and the quantity and value represented are constantly increasing. Since January, in eight months to August 31st, the statement of shipments is as follows, compared with similar periods in 1898 and 1899, showing a rapid enlargement of the trade:

	1898.	1899.	1900.
Mowers and reapers	$5,775,028	$5,718,567	$9,949,027
Plows and cultivators	736,491	1,276,972	1,674,275
Other implements...........	1,009,848	1,409,920	2,231,472
Total.......	$7,521,367	$11,495,459	$13,854,774

There is increase in all lines, and proportionally greater in the miscellaneous classifications.

We see in certain State estimates of cost of production a failure to appreciate the cheapening effects of modern farm implements and machines, showing a putative loss, the assumed cost being greater than the value of the products, while all the producers are living well, and some are growing rich, and year after year putting in liberal breadths of the same crops. The cost is exaggerated; the real cheapness is effected by farm machinery.

How much average saving is effected by implements and machines? It would require a long and difficult investigation, which has never been made. It would be found much greater in some crops than in others. In the same crops it would be much greater on some farms than on others, depending on the relative amount of character of labor-saving implements used and something on the manner in which they are used. Were their use universal, and fully effective, the average cost of production would be still more cheapened. The condition would then be ideal, and the result a still greater marvel of cheapness. Hon. Carroll D. Wright some time ago made an investigation in the Department of Labor to show how farm machinery has cheapened the cost of production. The investigation sought, in individual cases, the exact amount of cost of hand and machine labor, the number of operations performed, and time actually employed. For instance, it is shown, in 1830, that 64 hours and 15 minutes was the time employed in producing an acre of wheat, at 50 cents per day, and in 1896, by machine processes, 2 hours and 58 minutes, with wages varying from $1.50 to $4.50. For an acre of hay, 35 hours and 30 minutes was the record by hand labor, and 11 hours and 34 minutes by machine methods. We know that this improvement is not actually made, as an average; if it were, something like the following of saving would result in cereals and hay, usually worth, at farm prices, about $1,600,000,000, applying the cost per acre to the usual breadth of these crops, viz.: Corn, 82,000,000; wheat, 44,000,000; oats, 26,000,000; barley, 2,900,000; rye, 1,600,000; hay, 41,000,000 acres:

	Cost per Acre.		Total Labor Cost.	
	Hand.	Machine.	Hand.	Machine.
Corn.......	$3.6250	$1.5130	$297,250,000	$124,066,000
Wheat	3.6333	0.6892	159,865,200	30,324,800
Oats	3.7292	1.0732	96,959,200	27,903,200
Barley......	3.5958	0.6020	10,427,820	1,745,800
Rye........	4.1061	2.6142	6,569,760	4,246,729
Hay........	1.7501	0.4230	71,754,100	17,343,000
Total.....	......	......	$642,826,080	$205,629,520

On the basis of results of the Labor Department's hand and machine inquiry the reduction in labor cost, the clumsy hand methods being all replaced by machine processes, would be $437,196,500, or 68 per cent. of the whole cost of labor. Thus we can see how farmers produce and live as prices get lower. In cereals and hay, machine methods are generally used, and it may not be extravagant to say that $250,000,000 to $300,000,000 may be actually saved annually in the cost of these products by use of farm implements and machines.

Is this use of machinery a disadvantage to farm laborers? On the contrary, it is beneficial. It is a question as old as machine invention. Industrial conservatism and prejudice declare in the affirmative. The facts of industrial progress declare in the negative. The farm laborer's lot is made easier by these inventions, his hours of service shorter, his mental faculties stimulated, and he becomes a more efficient worker, a broader man and a better citizen. Have improved implements reduced the number of laborers? Not necessarily. They have enabled a given amount of work to be done by fewer men, but they have greatly increased crop acreage, and made higher cultivation possible, and more operations for soil amelioration and farm improvement. Prof. Davenport, before the Industrial Commission, testifies that agricultural machinery intensifies the labor put on the land, and enables farmers to use more per acre than they otherwise could, more labor in drainage, in physical amelioration of soils, in fertilization by ammonia gatherers, in many things absolutely essential to increase of yield and profit. The old-fashioned farm, by old methods, cannot produce enough to find the means of employment of this necessary labor.

This fact should be deemed a conclusive answer, that where we find the largest use of agricultural implements we find the greatest prosperity among farmers, and the least discontentment and dissatisfaction among farm laborers. And in the districts where they are least used there is debt and destitution, and unprogressive conditions generally—the lowest wages, the lowest scale of living, discomfort and unthrift. It is certainly an advantage to laborer as to land-owner, and whether either likes it or not, it is inevitable, in the order of progress, and those who will not use it must go to the wall.

There is another consideration that should not be forgotten. The influence of farm machinery on agricultural labor has been great in improving its efficiency. Forty years ago where a reaper was sold a mechanic was sent sometimes a hundred miles, sometimes two hundred, to set the machine up and teach some one to run it, and that was a large element in the higher cost then of such machines. Now there is scarcely a farm where such teaching is needed. The good farm laborer is now a good mechanic, and uses his brains and his experience in many ways unthought of forty years ago.

Maize Fed Swine—United States.

El Banco Agricola, of San Juan, Porto Rico, is making preparations, according to advices received by New York city firms, to open a branch office in New York city for the purpose of increasing the export and import trade between the island and the United States and also to induce American capitalists to invest in agricultural and other pursuits in Porto Rico. The Banco Agricola is said to be a sound financial institution.

EXPORT IMPLEMENT AGE

FOR CIRCULATION IN FOREIGN COUNTRIES ONLY.

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When countries trade and exchange productions civilization advances.

Freight steamships are now in the "war trade" and freight rates for coal, lumber, iron, etc., are higher than for many years.

The best evidence of the prosperity of a country is when her people can trade with all portions of the world. Peace and good-will among nations is the greatest of all blessings to the people.

A man is born on the earth and not particularly in some country. Birth-place is a matter of accident. All men are countrymen to a certain extent and should buy and sell in the best markets.

Economy in labor means to use the labor-saving implements. Hand labor may be cheap, but the day is past when it can compete with the machine. The farmer must use the machine or implement to avoid being crushed to the wall.

Spain is building up her resources rapidly, and as her enterprising merchants are now determined to do their part in increasing trade, we expect many changes for Spain in a few years. Barcelona is one of the leading enterprising cities of Europe, and is a trade center of great importance.

An implement which has of late received many inquiries from new quarters is the potato digger. It is an implement that the small farmer can use to advantage. Potato implements are made after various patents. Dealers abroad should note some recent improvements made in them and confer with the manufacturers, a list of whom will be found in each issue.

The American people are of nervous temperament. It is said of them that they are always in a hurry. They will not work with imperfect implements. When they invite the people of other countries to buy their goods it is with the confidence that the articles are of the best that can be produced.

It is not so many years ago when the farmer in foreign lands was content to use one plow for all manner of plowing all kinds of soil. The study of particular requirements has been a feature of progressive agriculture. It is year by year becoming more so. It is because farmers abroad can find an implement just suited to their particular needs that they have learned to consult the importers of American implements. It is quite surprising how much is to be gained by getting an implement exactly fitted to do its intended work.

American windmills are growing in demand abroad, but not in the ratio that they are selling in the United States. In many localities abroad old-time laborious methods are still followed where windmills would greatly curtail toil if used. Implement dealers are not wanting in enterprise in calling attention to this valuable aid in farm work, but the force of habit perhaps too frequently defers the purchase of a windmill. In those parts of Europe where the windmill is freely used the farmers show the results in comforts and convenience which, if realized by farmers in other places, would spread their use. The windmill is the coming power for a great number of uses on the farm. It is the poor man's joy and the rich farmer's lasting friend. Its cost places it within reach of thousands who have not yet profited by it.

A recently returned Paris Exposition visitor, who made a tour of Europe to learn where wagons could be sold to the best advantage, says that he is convinced the light and strong American wagon will lead all others among advanced European farmers. They have encountered, he thinks, more difficulties than almost any other farm device that has gained a footing in Europe, but the gains the American wagon has made this year among the influential dealers promises to result in increased trade from this out. European dealers who have overlooked the American wagon will find in the recent makes certain improvements which will commend them more strongly than ever to the European and South African trade. American wagon makers have been closely following up foreign requirements, and are now making wagons that have only to be properly brought before the attention of the agricultural communities beyond the seas to make their wagon trade a much more important feature of their business than it has been.

Our European correspondents speak of some of the advantages of American binders, reapers, mowers and rakes which only need to be pointed out to European farmers generally to bring them into larger use. A year ago sales were made in some localities in France and Germany which were regarded as trial sales. The results this year have been gratifying, as shown in larger orders from the dealers controlling trade in the localities referred to. The sharper the competition the better the outcome for the American harvesters.

The agents who are responsible for the remarkable increase of inquiries during the last two months from Argentina ought to certainly feel encouraged with the outcome of the seed they have been planting for a year or two past in favor of United States made implements. American machinery of all kinds is popular there. Every month brings more inquiries. The efforts of agents in agricultural communities pay well, as figures prove. The field is merely entered upon. Argentina as a producer of wheat is attracting the attention of the world. American-made implements are to be credited with a large share of this success. To the Argentina importers it is hardly necessary to say that the faith they have placed in American implement makers has been repaid. They have only to watch their products year by year to see the exhibition of higher skill and art in manufacture in the production of implements of the highest economic value and adaptability to one climate, soil and crop.

The sellers of United States implements in all foreign countries can safely take it for granted that the advanced position taken by the United States in agricultural methods and in agricultural machinery of the highest efficiency will be maintained. There is no country on the globe where as much attention and study is bestowed on methods and machinery as in the land which stretches between the Atlantic and Pacific and Mexican Gulf. There are agricultural colleges in three-fourths of the States. There are in some of them departments of agronomy where implements and agricultural machinery of all kinds is sent by leading manufacturers to be used in the instruction of students in the mechanics of the farm, and where tests and trials are conducted and demonstrations made. In this way not only are the advantages of this or that make of implement demonstrated, but the adaptivity of implements to different conditions, different soils and different requirements are shown. The manufacturers have the advantages of these tests and adopt the necessary improvements. Nothing is lost and a thousand eager competitors are watching where to modify their work to give better results.

THE NEW CENTURY.

Half a century ago many of the breeds of horses, cattle, sheep and swine in the United States were unknown. The fast trotters had not come into existence, while the running horses were from 10 to 20 seconds slower in going a mile on the race-courses of that day if compared with present records of time. There were no Jersey, Holstein, Galloway, Angus or Guernsey breeds of cattle in this country, and the Short-horn was known as the "Durham." The Cotswolds held the lead among sheep, the Oxfords, Shropshires and Hampshires (all "downs" breeds) coming later. The Berkshire hog had been introduced, but it was not like the Berkshire of to-day. The Chester White, Yorkshire, Essex and Suffolk hogs were years in winning public favor, while the Poland China is of much later date. Among poultry the Shanghai and Cochin were introduced about 1853, and from them have come, by crossing, many of our best breeds of poultry, such as Brahmas, Plymouth Rocks, Wyandottes and Cochins, so well known now. The Embden and Toulouse geese, Pekin duck and some of the breeds of turkeys were unknown. The Percheron, Clydesdale and hackney horses were not improved to their present form, even in Europe, and the horses used were lighter, but had more speed and endurance in hauling loads to market, as the farmer had to use the turnpike and country roads to forward his produce, even the roads being as primitive as the wagons and implements used. The animals of the present day give almost double the service derived from their kind half a century ago.

Comparing the new year and new century with the year 1850 the labor-saving implements that have been invented for service on farms, the farmer of the present can ride when he plows, harrows, cultivates, plants or harvests his crops. He can also perform more work, in some lines of farming, in a day than could formerly be done in a week, and also at less cost. His produce can be sent to market in bulk, and in a few hours instead of days, and his wagons are not only stronger and lighter, but much cheaper. Wire has banished the old-style worm-rail fence, and new varieties of grains, fruits and vegetables have been introduced. In 1850 the strawberry was but little larger than a pea; the tomato was about the size of a walnut; the crab apple was in the lead; the Concord grape was unknown, and the peach and pear had not been greatly improved. Fruit growing as a business had not made any progress, and thousands of bushels of apples rotted in orchards every year. In some sections the cattle, hogs and sheep were expected to secure a large share of their food on unproductive fields, and the "mast" of the forests was considered a necessary adjunct in the feeding of hogs. Flocks of sheep were turned out to roam at will, being "salted" occasionally in order to have them come up once and a while to be counted. The cow-bell was one of the equipments, as the animals would frequently stray away and were brought up at night to be milked. Now the cow-bell is not required, and the hog that is active enough to seek mast in the forests is not the kind wanted.

Coöperation is also gradually entering into farming, though perhaps not noticed by many. One grain separator and cleaner, drawn from farm to farm by a traction engine, does the work for the entire neighborhood. The creamery and the condensed milk factory create markets at the doors of the farms. The farmer can buy butter from the creamery cheaper than he can make it from a small herd, and he combines with his neighbors in the purchase of pure-bred stock. Within the past year the corn-fodder shredder has been on its mission, performing work for several farms, while fruit growers have organizations which give them advantages in shipping and selling. Before a decade passes away the larger share of the work on farms will be performed with electricity as the source of power. Already the wire fences serve the farmers to convey telephone messages from one farm to the other, and free delivery of mails at the doors will soon cease to be a novelty. The condition of the farmers has greatly changed in many respects. Railroads bring the farm within an hour or more of the city, while 50 years ago at least two days were required to make such a journey. Free schools are in every township, and the roads are being made better every year. The farmer makes more actual profit than formerly, as he gets better prices for his produce compared with their cost, while the goods he purchases are much cheaper, many of the articles used at present being enjoyed only by a few as luxuries half a century ago.

A FEW WORDS TO DEALERS ABROAD.

Railroad building in foreign countries is to be the mighty factor which is to lead to a cultivation of the soil on a scale never before dreamed of at home or abroad. It is only within three years that railroad building on a large scale has been systematically undertaken in many foreign countries. Every month brings new enterprises to the front in Mexico, Central America, South America, Africa, Southern Asia and in the islands of the oceans. It is the significance of all this to dealers in agricultural implements abroad to which attention is directed. This era of railroad building in the lesser countries of the world means a transformation from existing conditions to better. It means everything that means progress. It means from ten to fifty implements where there are now one. It means broad fields under methodic and scientific cultivation where now jungles and swamps and patches of clearings abound. The change will come sooner than appearances indicate. One has but to keep track of the exports of rails, locomotives, cars and railway material and equipment to almost every country under the sun to understand what is meant. Anything like an enumeration of even the railroad building enterprises under way at this time would be impossible. American rail mill owners are now negotiating for enormous shipments abroad. Casting aside the volume of railroad building that the capitalists of America and Europe are engaged upon, and looking ahead to what it all means, what do we find? Simply that the native population of all these lands is being gradually stimulated into activity in inducing the soil to furnish them sustenance, and we see opportunities opened for an outflow of people from more densely populated portions of the globe to new sections, where living can be had in more abundance with equal or less effort. In short, the railroad building era now setting in all over the rear end of our civilization means the arousing of these people to greater and more systematic agricultural labor to wider and create permanent markets for implements and machinery, to the changing of the habits of the people from thriftlessness to thrift, and from inertia to industry, and the lands they live in from what they are to regions of agricultural and industrial activity. As has been said elsewhere, those who stand as the agents and exchangers of the products of shops and factories have the grandest work before them ever allotted to man.

CREDIT AND TRADE.

One of the vices of the age to be overcome is that of credit. The impulse of every honest man is to pay for what he gets. Under existing conditions it is impossible for thousands to save enough to buy what they need. In Europe the necessity for credit is less than in any part of the world outside of the United States, a fact which is creditable to her industrious millions. In other countries commerce is greatly impeded by the necessity of allowing the user to make the money with the machine or implement, at least in part, that is to pay for it. This condition of things is not the fault of any one, of any country, or of any government. It is not a condition which can be immediately remedied. The remedy is not by law, regulation, decree, or treaty. It must come by growth, and that growth is a struggle. That struggle can be lessened by using the best aids to labor by the best machine and the best implement. This truth is being demonstrated all the time, and upon this truth rests so much of the demand for the best work of the American implement maker.

AMERICAN METHODS.

"The Export Implement Age" has long recognized the need of a wider diversification of knowledge of agricultural methods among the agriculturists of the world. The progress made in agriculture in the United States has been aided quite materially by the farm press, which, by its teachings and by its exchanges of views and methods, has diversified knowledge among the farmers of the United States. The manufacturers of implements and machinery of all kinds have gained in knowledge, efficiency and skill by frequently meeting together and comparing experiments, and each telling to all others all he has learned through practice. This broad-minded method is peculiarly American, and it has proven itself to be a gigantic lever to elevate the general standard of skill. The farmers of the United States do not consider that they know more about agriculture than the farmers of other lands, but they have experience, and they have developed methods and achieved results in several lines which it would do farmers elsewhere no harm, and possibly some good, to know. If those who are introducing American implements to the outside world were familiar with American farming methods from plowing to harvesting they would perhaps find their knowledge quite an aid in pushing the sales of their implements, especially where they could point out and demonstrate the advantage of one make or style over another in the doing of work. Farmers sometimes imagine they know it all, but many are willing to listen and to be informed. There is room here for implement dealers to become not only salesmen, and very successful salesmen at that, but instructors in the art and science of agriculture. In fact, such services are year by year becoming more necessary as agriculture penetrates new regions and opens up new territory with the progress of railroad building. Agents, importers and salesmen must, as we progress, use every aid to strengthen themselves in their push for business, and this way, through enlightenment to farmers of the better way to cultivate their land, is one of them.

THE PARIS EXPOSITION.

The Paris Exposition has imparted a stimulus to the American manufacturer to fit his implements to special conditions as they exist in foreign countries. The fact has always been recognized that a certain adaptation to special conditions was demanded in agricultural implements. It has been the aim of the American manufacturer to ascertain what these requirements were. The information was not always easily obtainable. More intercourse, however, gradually opened the eyes of Americans. The implements of recent manufacture have been found to meet with welcome in almost all foreign countries. There are some countries, like Mexico, where special adaptation is no easy matter, especially in plows, because of the sticky character of so much of the soil, where deep plowing is unnecessary. Besides, the extensive use of irrigation does not call for the same degree or kind of plowing. For all that, there is a steady approach to these requirements. As knowledge of the special agricultural conditions of different countries grows, adaptation follows. This applies, however, to agricultural interests. In machine shop equipment it is the European who adapts himself to the American idea. But farm life and farm necessities are different, and old habits cling tenaciously. Despite this fact there is progress. American manufacturers are finding other means of knowing what is wanted, and their success through the coöperation of agents abroad is yielding good results. The problem is a vast and intricate one, that one of changing the habits of centuries, habits which are almost as solidly fixed as the rock-ribbed hills that form their horizons. Agents and importers abroad often feel that the struggle is a double one, and that the presentation of superior implements at low prices ought to be enough to bring customers. But the contest ahead is not merely that of offering something better. The real work the middleman of the 20th Century has before him is an educational one, a work of demonstration. The inducements are great, even if not immediate.

DIFFICULTIES OF AGENTS.

One of the difficulties which agents and sellers of American implements have to encounter in their respective countries is the preference or prejudice in favor of implements with which farmers have been familiar for generations. This is no small obstacle. Human nature is a curious force. It has pride, and that pride cannot be roughly handled. It requires to be gently dealt with. The old-time implements have a hold which cannot be rudely broken, even when the dealer knows he has an American implement in every way superior and which will do more work and do it better. A great point is gained when an innovation is made. There are many tillers of the soil who have become so accustomed to do a certain amount of work each month and each season for so much return that they are not quick to adopt something which promises more result with less effort. Agents have mentioned this peculiarity, but fortunately it is not universal. It is for the salesman or merchant to point out the advantages to be gained by the use of the better implement, and to demonstrate the greater comfort and greater progress that is within the reach of all who can be induced to forsake the time-honored old device for the time-saving new appliance.

FARMING IN THE UNITED STATES.

The one word which underlies farming, as it is practiced in the United States, is "extensive" as regards farming, but in Europe it is "intensive," if we may coin a word. To cultivate the most ground is the American idea; to cultivate the ground the best, is the distinctive European idea or purpose. The extensive idea has led to the production of machines and implements to do the greatest possible amount of work at the least cost. The intensive idea, which prevails in older countries, naturally clings to manual methods and looks on mechanical coöperation with less interest. This idea, in the early stages of the introduction of American farming implements abroad, made the task exceptionally difficult, but as the advantages of mechanical aids became apparent, machinery was gradually adopted. But the adoption was necessarily slow because of the limited and well defined areas of land under the control of each farmer, and who had in times past managed to cultivate it without machinery to the extent of his pressing necessities.

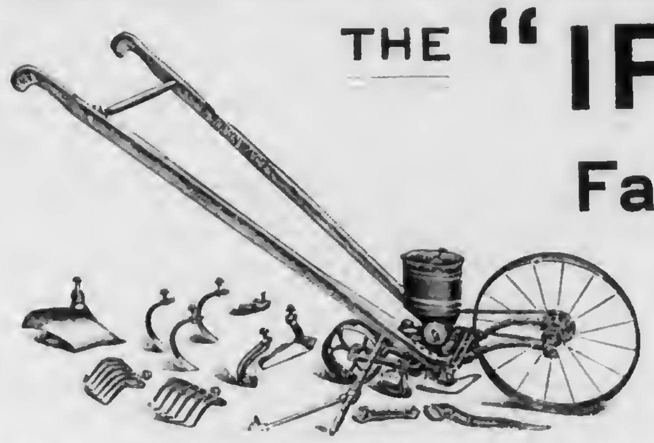
Since the advent of new factors the narrow farm limits of foreign countries have been expanded and the opportunity thus opened for the use of machinery. These factors were and are railroads by which more remote markets can be reached, and the increasing demand due to greater numbers of the population becoming engaged in manufacturing.

In the United States there are signs in some localities of an approaching return to intensive styles or methods of agriculture, which naturally manifests itself in a certain modification of agricultural appliances to meet the demands. Thus conditions in Europe and the United States are pointing in the same direction, though in point of fact they can never meet.

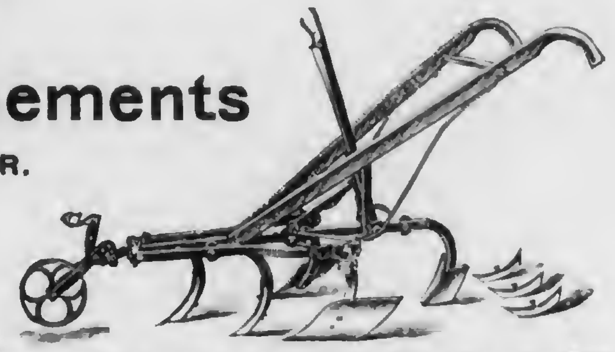
The moral of it all is that as the rage of competition increases, Europeans will find in the American workshop the mechanical devices most useful to them. Why not find these devices in England, where the conditions are more like those on the continent? The reason is that the incentive is lacking in England, and it is present in America. The abundance of land in America stimulates invention to use it and to make the best possible use out of the smallest portion, because forced to do so by ever-present competition, which is absent in the same sense in England, where land is restricted.

It is therefore logically true that to the United States the world must look in the future for those improvements in implements and machinery which scientific agriculture will demand as aids, for it is in scientific agriculture genuine progress is to be made in the future.

THE "IRON AGE"
Farm and Garden Implements
FOR 1901 ARE BETTER THAN EVER.

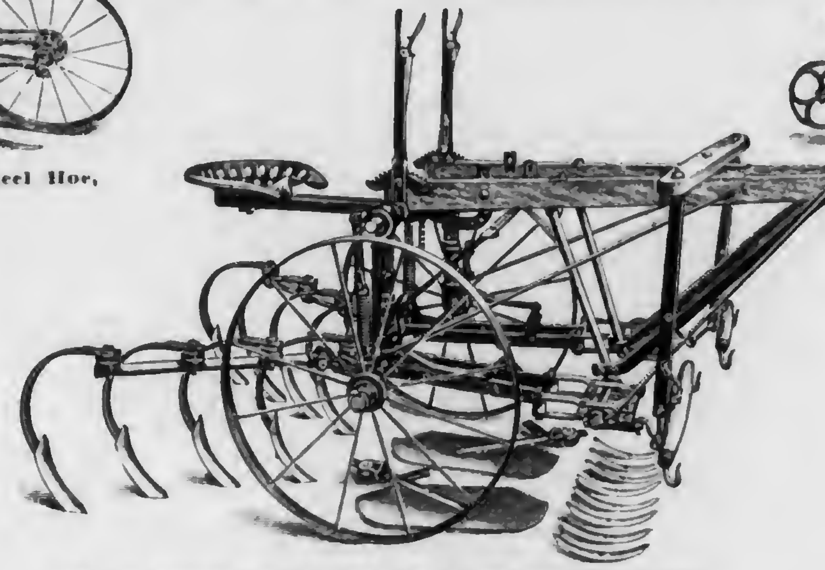


No. 15 "Iron Age" Combined Single Wheel Hoe, Hill and Drill Seeder.



No. 76 "Iron Age" Horse Hoe and Cultivator with Plain Wheel.

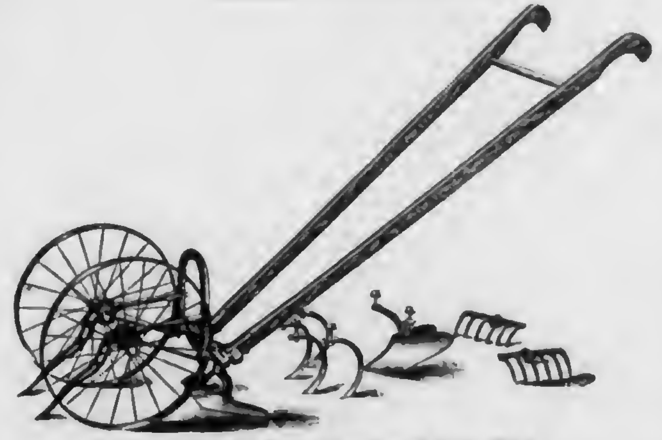
Nine New Tools Added to Our Line for Season of 1901.



No. 75 Spring Tooth "Iron Age" Combined Pivot and Fixed Wheel Riding Cultivator.

Made Honestly of Good Materials and on Sound Mechanical Principles.

No. 1 Improved Robbins Potato Planter.



No. 1 "Iron Age" Double Wheel Hoe.

BATEMAN MFG. CO.,
Box X. GRENLOCH, N. J., U. S. A.
EUROPEAN AGENCIES: GEO. W. SILLCOX, Brussels.
McCORMICK HARVESTER MACHINE CO., London.
AUSTRALASIAN: ARTHUR YATES & CO., Sydney.
Works Established 1836. Correspondence Solicited.

SALEM IRON WORKS,
SALEM, N. C., U. S. A.
Manufacturers of

Steam Engines, Saw Mills, Wood Planers, Railroad Cross-Tie Machines, Coffee Hullers, Pulpers, Washers, Dryers, Polishers, Centrifugals, etc. Complete equipments furnished for Saw Mills and Woodworking Establishments or plants for handling the Coffee Crop. Estimates furnished on application. Parties interested should state explicitly what they want. Full Descriptive Circulars or Catalogues mailed on application.

The above cut shows the U. S. Coffee Huller, Manufactured by the Salem Iron Works, Salem, N. C., U. S. A.

MAUD S.
WIND MILL AND PUMP CO.
Lansing, Mich., U. S. A.
Manufacturers of the Original
Maud S. Pumps,
Pumping and Power Windmills,
ESPECIALLY FOR EXPORT.
Write for our latest Illustrated Catalogue.
EXPORT OFFICE:
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LIGHTNING HAY PRESSES.

All Styles. Steam and Horse Power. All Metal.
MOST POWERFUL AND DURABLE.
Greatest apacity.
10 to 40 Tons per Day.
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409 MILL STREET.

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Representante de Fabricantes para la Exportación.
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"HENRY, WE HAVE HAD A PROSPEROUS YEAR."
"YES MARY, I TELL YOU A MAN CAN MAKE NO MISTAKE IN SECURING THE OSBORNE AGENCY AND I SHALL HOLD MINE FOR 1901."
GREETING
MERRY CHRISTMAS AND A HAPPY NEW YEAR
D.M. OSBORNE AND CO

"SOFT CENTER" STEEL.

Why American Plows Are Superior to All Others—The Material That Goes Into the Plows.

[Written expressly for "The Implement Age."]

The "soft center" steel used in the moldboards of high-grade American steel plows is one of the remarkable products of American inventive genius. Its value to the American farmer has been incalculable. It is the most durable form of steel known for a moldboard, and it is the only material that will 'scour" or clean itself in light loamy soil, such as we find on the American prairies.

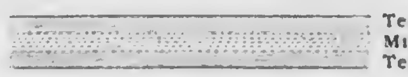
The "soft center" steel mouldboard is a composite plate, made of three plates of steel, which are welded together and rolled to the thickness desired. The middle plate, or center, is of mild steel, which will not temper, while the front and back plates are of the finest crucible, or tool steel, which takes the very hardest temper. The advantages of this composite moldboard are best understood by examining the development of the steel plow in America.

When the prairie soil of Illinois and other Western States of America was broken by the first settlers, and the wild sod had decomposed, it was found that the plows with wooden or cast iron moldboards, which the pioneers had brought with them from the East, could not be used. The light, rich soil clung to the moldboard, and plowing became impossible. It was discovered, however, that if a moldboard was made of a very fine grade of tool steel it would clean itself and in the stickiest soil. At first, prior to 1840, plows were made of wood, with steel points or shares, and the moldboard was covered with steel plates that were improvised from old saws. A few years later the plow makers were able to obtain blank plates of saw steel, of the proper width for moldboards, and steel was also imported from England and Germany. In 1847 the first "plow steel" was rolled in America, of a thickness that made wood backing unnecessary. It was soon found, however, that even this steel would not always scour unless it was tempered so hard as to make the moldboard too fragile for use on the farm.

In 1868 Mr. John Lane, a Chicago inventor, obtained a patent on a form of moldboard which soon came into general use, and is, with some improvements, the "soft center" steel of to-day. The idea of this invention was to strengthen a plate of the hardest crucible steel with a backing of soft iron, but since the iron and steel would not expand and contract together in heating and tempering, it was necessary to make a moldboard of three plates. The crucible steel plates on the front and back would expand and contract together, preserving a balance, so to speak. The composite plate could then be heated, hammered to the proper curvature, and tempered, without warping.

This process of making plow steel was at once adopted by Pittsburg steel mills, and is in use to-day, with some modifications. Mild steel is now used for the center plate, instead of wrought iron, and great improvements have been made in the process of welding and rolling. By the ingenious use of eccentric rolls a moldboard is rolled so that the front or cutting edge is thickened, making what is known among plow men as the "double shin."

"Soft center" steel is a very difficult product to handle, requiring the greatest care to secure a perfect union of the plates, but the finished steel is remarkable for its uniformity and high grade. This steel, which is only made in the United States, gives to American steel plows the superiority for which they are famous, in durability, strength without cumbersome weight, and perfect scouring.



Sectional View of Piece of "Soft-Center" Steel.

OUR TRADE BALANCE WITH ENGLAND.

Great Britain will buy, in 1900, of our country, about $435,000,000 more of merchandise than we will buy of Great Britain. That is to say, this enormous sum will be our apparent balance of trade against the Old Country. The London "Statist" reports the above figures as England's apparent debt to America on the business of the year, and comments as follows: "Against this indebtedness must, of course, be placed America's annual obligations to this country for interest, insurance freights and tourist payments. But when all these offsets have been taken into consideration there can be no doubt that we owe a very large sum of money to the United States which they can take in gold or in securities. During the past three years America has taken a very large quantity of securities from us in payment for her produce; but will our investors be willing to part with many more securities now that the danger of free silver has been finally removed, and they can secure a better return upon the capital they invest in American securities than in those of any other country in the world? Further, will not enterprise in the United States be enormously stimulated by the success of the sound money party and the confidence it has begotten? And will not America use her increasing wealth in the more rapid development of her own industries? Hence, may we not soon be called upon to pay in gold for a portion of our huge purchases from the United States? Undoubtedly England is, at this moment, paying a part of the balance owed the United States in gold. And this manner of payment will become more and more the rule as our country becomes more able to carry its own securities and have surplus enough over to carry forward American enterprises.

THE NIJNI-NOVGOROD FAIR.

This is the great Fair of Russia, and usually opens on July 15th. It may be said to be the greatest of all Fairs in Europe, as nearly everything is shown and visitors come from all countries. The agricultural implement and vehicle display is one of the leading features, and the sales made reach up into the millions of dollars, some estimates being as high as $100,000,000, though a lower figure would probaby come nearer the transactions. It may be safely claimed, however, that there is no Fair like it, and it has been held annually for over a hundred years.

U. S. DEPARTMENT OF AGRICULTURE.

Features of the Annual Report of Secretary Wilson.

Secretary Wilson, of the Agricultural Department, in his annual report begins with a complimentary reference to the work of his predecessors, which has brought the Department of Agriculture to its present state of efficiency. He declares his own aims to be to bring the Department scientists to the help of the producers to ascertain what we import that they can produce, with a view to encouraging its growth; to search the world for grains, fruits, grasses and legumes that they may be domesticated here and be an improvement on what we have; to secure new and improved varieties of plants by cross-fertilization; to coöperate with the experiment stations in all the States and Territories in research of practical value to the people of all sections, and to seek out new markets for our surplus products.

He emphasizes the manner in which the Department differs from others. He says its appropriations should be regarded as an investment, for the reason that it makes direct returns therefor by adding to the wealth of the country, thus adding yearly largely to the profits of the farmers and others as the result of its investigations. He instances as money-saving or money-making agencies the Weather Bureau, the meat inspection, the pathological investigations of plants, the services of the entomologist, the services of the Department on behalf of the sugar and tea industries, of the orange industry, which owes its beginning and its preservation to the Department, of the tobacco industry and others.

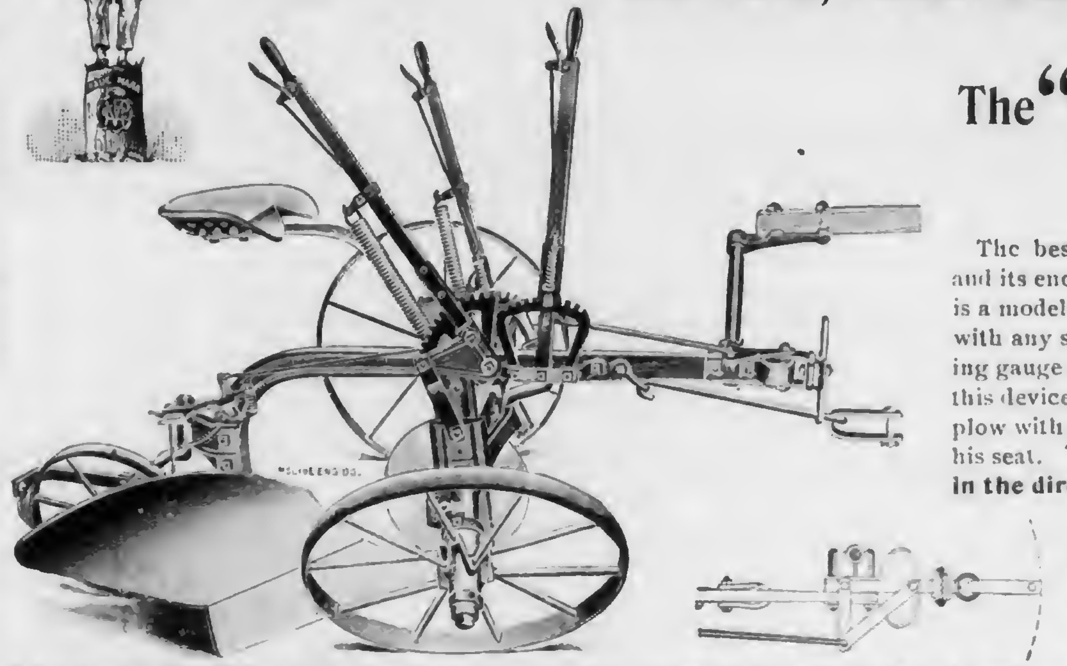
Then, taking up the work of the Department in more detail, he reviews the operations of the several branches. The report says that the study of the markets abroad, with special reference to extending the demands therein for the agricultural products of the United States, has been prosecuted with zeal and intelligence. From the records of this section we derive most satisfactory information as to the development of our agricultural exports. While it is true that these bear a somewhat smaller proportion to the total exports than formerly, nevertheless the actual increase is very great. During the fiscal years 1897-1900 our total sales of domestic farm products to foreign countries aggregated the enormous sum of $3,186,000,000, an excess of $800,000,000 over the preceding four-year period. The agricultural exports of the United States for the past fiscal year amounted to $344,000,000. The rapid growth of our export trade to the Orient in recent years is most striking. Five years ago our total shipments of domestic merchandise to Asia and Oceanica were valued at $43,000,000, of which only $9,700,000 were agricultural. There has been a steady increase in each succeeding year, until in 1900 our export trade with the Orient amounted to $107,000,000, of which $30,000,000 worth was farm produce. Of this great increase in the growth of our agricultural exports to that quarter of the globe, amounting to something over $20,000,000, $11,500,000 consisted of cotton and $3,400,000 of wheat flour.

Manufacturers of the Famous "Moline Plows" and "Flying Dutchman" Farm Implements.

MOLINE PLOW CO.

MOLINE, ILLINOIS, U.S.A.

WALKING and RIDING PLOWS
PIPE LEVER HARROWS
and DISC HARROWS,
CORN DRILLS and PLANTERS,
CORN CULTIVATORS,
SUGAR PLOWS and
CULTIVATORS,
BEET SEEDERS, CULTIVATORS and HARVESTERS.



The "Good Enough" Sulky Plow.

("Bastante Bueno")

The best evidence of the value of this plow lies in its great popularity and its enormous sales in the United States and many foreign countries. It is a model of simplicity in design and construction, and can be equipped with any size of plow bottom desired. It is fitted with the new style landing gauge shown in the illustration and detail cut. The great advantage of this device is that it enables the operator to regulate the "landing" of the plow with two, three or four horses in any kind of ground without leaving his seat. **This means of "landing" causes the plow to always travel in the direct line of draft, and insures lighter draft.**

Correspondence from agriculturists and dealers in any part of the world cheerfully and promptly attended to.

We issue Catalogues and Circulars in the English and Spanish languages describing our unrivaled line of Walking and Riding Plows, Harrows, Drills, Cultivators, etc.

MOLINE PLOWS have gained an enviable reputation for excellence, and are well deserving of this distinction on account of their shape, workmanship and material. The shape and design of each plow is just what it should be to perform its special duties; the workmanship is such as can be attained only by most experienced mechanics, and the material has been made a special study, so that these plows stand as models of excellence.

Something New in Sickle Grinding.

Emery to cut fast, must run fast.

Luthers' Automatic Bi-Pedal (foot-power) has four times the speed of other grinders.

A whole sickle ground without the least fatigue.

Completely supplants the sand grindstone for sharpening tools.

Weight of Bi-Pedal, 36 pounds.

A revolution in sickle and tool grinding.

The price suits everyone.

Write for catalogue.

LUTHER BROS., Manufacturers,
MILWAUKEE, U. S. A.

The "CHALLENGE" Automatic (hand power) has Eleven Parts. Length of Crank Handle, seven inches. Speed, twenty-seven turns of Emery Wheel to one of the Crank. Weight, 18 pounds.

$1.00 Per Year Subscribe FOR THE Export Implement Age $1.00 Per Year

Walter A. Wood Reaper at work in a field of oats near Herford, Westphalia.

Walter A. Wood Harvester in Denmark.

Walter A. Wood Binder in its 19th season on a farm near Breslau, Germany, still giving complete satisfaction.

WORLD-WIDE RECOGNITION

Wherever grain is raised, or grass is grown, Wood harvesting machines are used.

Wherever fairs, or expositions, or field contests are held Wood machines win prizes.

The sale of our various machines has now girdled the earth.

They are sold in every climate and in every country where there is a demand for agricultural machinery of this kind.

Here are shown reproductions from actual photographs. They are harvesting scenes in Germany where Wood machines are being used.

These are not isolated special instances. They are typical scenes.

It is probable that more Wood machines are used in foreign countries than of any other make.

Wood machinery has won prizes, medals, awards and premiums to the amount of over 1,400, all on its merits.

All these things are just so many more arguments as to why it will pay you to sell our machinery.

It is recognized as the best everywhere—in our own country and abroad.

Each machine stands for a distinct idea. It is not an adaptation, a copy, a variation or an echo of any other machine made. It is a new, successful, logical and practical machine. Each is the best of its class.

A good, live dealer who looks to the future can make more money and build up a better business handling Wood machines than he can by handling any other make.

We have the documents to prove it, and we have beyond question the best business organization for the sale of harvesting machines that there is in the world.

WALTER A. WOOD MOWING AND REAPING MACHINE COMPANY

Hoosick Falls, N. Y., U. S. A.

CHARLES AUSTIN BATES N Y

AUSTRALIAN DEMANDS.

The agents and importers of American agricultural machinery in Australia deserve a high degree of credit for their zeal in pushing into use those classes and makes of implements which they conscientiously believe are the best for their trade and country. The volume of exports of all kinds for one week, the last week in October, from New York was $1,152,583, of which over three-fourths were manufactured products and of which agricultural machinery and implements constituted a considerable portion. The actual figures for the week named for implements was $175,000. Australia is a market that consumes nearly every finished product manufactured in the United States. From tables just published by the British Board of Trade, it appears that the United States has become a prominent competitor in Australia. In five years the imports in New South Wales from the United States have nearly doubled, while the exports to the United States arose from 3 per cent. of the entire exports to 21½ per cent. in 1898. Our Australian agents for American implements can rely upon having, as time goes on, the best work and skill of American implement makers.

FREIGHT RATES.

The next issue to be met in the development of our export trade is the question of freight rates. A study of the tables of rates for the past year shows, generally, an advance, but this is largely accounted for by the absorption of tonnage for South African, Asiatic and Philippine war purposes. The shipyards of the world were never so crowded as they are now. Ships were never wanted in such numbers, and of such enormous tonnage, as now. A great want has suddenly seized the world. The shipyards will be centers of activity until this extraordinary demand is met. New yards are being established and a fever of anxiety prevails to secure facilities to reach the farthest corners of the world in the shortest time with the largest loads.

Out of all this must come, as it is coming, a lower rate or cost for the carriage of freights from one country to another. International trade will become a giant factor in the world's growth. Heretofore comparatively little of the production of each country has been exported. Hereafter the exports will increase. The expansion has started. It will grow amazingly. International trade is to be one of the mighty levers by which the world's expansion and growth into a higher existence and a broader civilization is to be effected.

The railroads have in a century accomplished more for humanity than had been accomplished in a thousand years. The next agency in the order of Providence and Evolution is—ships. The railroad builder has led civilization for decades and his work is by no means done. The ship builder and the ship navigator are the coming men to whom the world will be indebted for the next great onward stride, for which a half dozen past decades have been but the preparatory school.

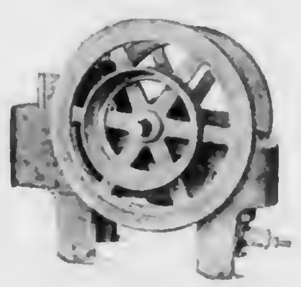
The European agents for American apple-parers have nothing but the best words to send home as to their service among bakers, hotel keepers, and wherever they are sold. European agents will find it worth while to give some attention to this valuable and easy-selling device.

TRADE FACILITIES.

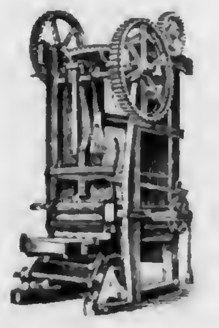
No one knows better than the foreign dealer what the difficulties are in the way of increasing the use of American manufactured products abroad. Despite these difficulties wonderful progress is being made. The various commercial and manufacturing bodies interested in the export trade have plans under consideration which have for their object the removal of obstructions to greater trade, among which are better and more direct banking and shipping facilities, the modification of bills of lading to be more in consonance with trade interests, etc. The United States has for a century been chiefly concerned with its own development. It is only within a quarter of a century that its attention has been more prominently directed to the trade of the world. Other nations have been striving for the world's trade always. It is not strange, therefore, that the manufacturers of the United States should discover that they can cater to the wants of all nations. Those who are familiar with American character can rest assured they will not have long to wait for freer commercial pathways. Ships, banks, parcels-post, treaties, warehouses, agencies, newspapers, all will come and take their place in the great work of placing the United States on an equal footing with the other nations of the world in the race for her share of the world's trade.

The
Export
Implement
Age,
$1.00
Per Annum.

ROCK and ORE CRUSHING MACHINERY.
(PORTABLE AND STATIONERY.)
BRICK MACHINERY STEAM AND ANIMAL POWER.

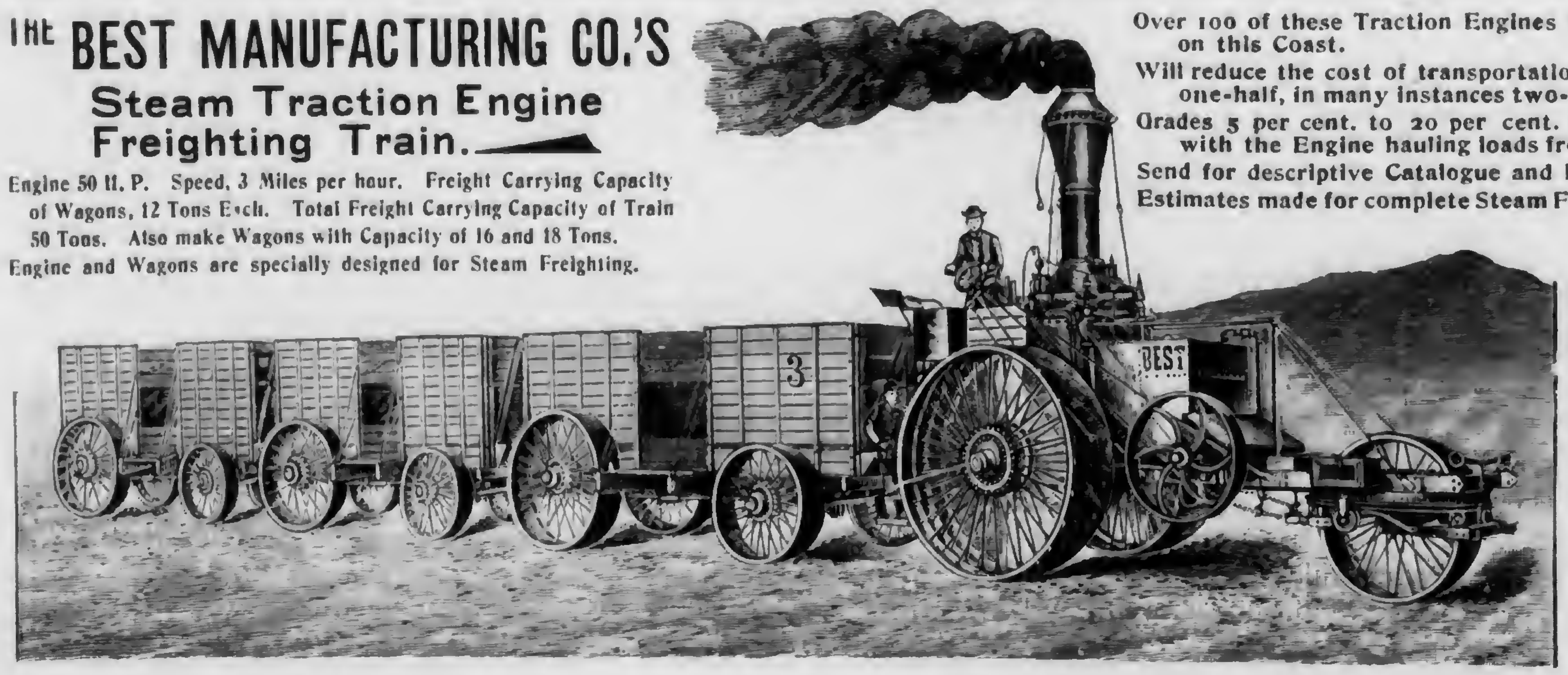


The Standard of the World.
We equip complete plants for the manufacture of Brick of all kinds; as well as furnish entire Crushing Outfits.
Detail Plans with Specifications Cheerfully Furnished upon Application.
Get Our Catalogues and Prices before you buy.



The Henry Martin Brick Machine Mfg. Co., Lancaster, Pa.
Cable Address, MARTIN-LANCASTER. Lieber's and A.,B, C Codes

THE BEST MANUFACTURING CO.'S
Steam Traction Engine
Freighting Train.
Engine 50 H. P. Speed, 3 Miles per hour. Freight Carrying Capacity of Wagons, 12 Tons Each. Total Freight Carrying Capacity of Train 50 Tons. Also make Wagons with Capacity of 16 and 18 Tons.
Engine and Wagons are specially designed for Steam Freighting.



Over 100 of these Traction Engines in successful use on this Coast.
Will reduce the cost of transportation per ton at least one-half, in many instances two-thirds.
Grades 5 per cent. to 20 per cent. are easily taken with the Engine hauling loads from 30 to 50 tons.
Send for descriptive Catalogue and Price List.
Estimates made for complete Steam Freighting Outfits.

ADDRESS
THE BEST
MFG. CO.,
SAN LEANDRO,
CALIFORNIA,
U. S. A.

EXPORT IMPLEMENT AGE

NUR FUR'S AUSLAND BESTIMMT.
Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

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Für ein Jahr, portofrei, - - - - Mk. 4.25
Gelder können per Tratte auf New York oder durch internationale Postanweisung übersandt werden.

Es wird gebeten, Mitteilungen jeder Art zu richten an:
THE NOLAN PUBLISHING CO.,
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Philadelphia, Pa., Vereinigte Staaten von Nord-Amerika.
W. P. NOLAN, Präsident und Director.
Von derselben Verlagsanstalt werden ferner herausgegeben: "The Implement Age" und "American Fertilizer."
Code für Telegramme: Lieber.

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Band III. Philadelphia, Pa., Ver.St.v.N-Am., Jan., 1901. No. 4

Wenn die Länder Handel treiben und ihre Produkte gegenseitig austauschen, schreitet die Civilisation vorwärts.

Frachtdampfer werden gegenwärtig in den Kriegsdienst gepresst, und die Frachtsätze für Kohlen, Bauholz, Eisen u. s. w. sind höher als seit vielen Jahren.

Die amerikanische Fabrikanten von landwirtschaftlichen Geräten und Maschinen haben auf der Pariser Weltausstellung einen grossen Teil der zuerkannten Preise davongetragen.

Der beste Beweis für die Wohlhabenheit eines Landes wird dadurch geliefert, dass die Einwohner desselben mit allen Teilen der Welt in Verkehr stehen. Friede und gutes Einvernehmen zwischen den Nationen sind für dieselben der grösste Segen.

Arbeitsersparnis wird durch den Gebrauch arbeitssparender Geräte bedingt. Handarbeit mag billig sein, aber die Zeiten, wo sie der Maschine Konkurrenz machen konnte, sind längst vorüber. Der Landwirt muss heutzutage Maschinen und Geräte anwenden, sonst ist er zum Untergange verdammt.

Der Amerikaner besitzt ein nervöses Temperament. Es wird ihm nachgesagt, dass er sich immer in Eile befinde. Er mag nicht mit unvollkommenen Werkzeugen arbeiten. Wenn Amerika die anderen Nationen zur Besichtigung seiner Geräte und Maschinen auffordert, so geschieht dies in der gerechten Erwartung, dass diese Artikel die besten sind, die überhaupt produzirt werden können.

Ein Gerät, das sich in jüngster Zeit vielfacher Nachfrage in neuen Gebieten erfreute, ist der Kartoffelausgraber, ein Feldgerät, das selbst der Kleinbauer mit Vorteil verwenden kann. Kartoffelerntegeräte werden nach verschiedenen Patenten angefertigt. Händler im Ausland sollten gewisse neue Verbesserungen derselben beachten und sich mit deren Fabrikanten beraten. Eine Namenliste Letzterer ist in jeder Ausgabe dieses Blattes zu finden.

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AUSTRALIAN DEMANDS.

The agents and importers of American agricultural machinery in Australia deserve a high degree of credit for their zeal in pushing into use those classes and makes of implements which they conscientiously believe are the best for their trade and country. The volume of exports of all kinds for one week, the last week in October, from New York was $1,152,583, of which over three-fourths were manufactured products and of which agricultural machinery and implements constituted a considerable portion. The actual figures for the week named for implements was $175,000. Australia is a market that consumes nearly every finished product manufactured in the United States. From tables just published by the British Board of Trade, it appears that the United States has become a prominent competitor in Australia. In five years the imports in New South Wales from the United States have nearly doubled, while the exports to the United States arose from 3 per cent. of the entire exports to 21½ per cent. in 1898. Our Australian agents for American implements can rely upon having, as time goes on, the best work and skill of American implement makers.

FREIGHT RATES.

The next issue to be met in the development of our export trade is the question of freight rates. A study of the tables of rates for the past year shows, generally, an advance, but this is largely accounted for by the absorption of tonnage for South African, Asiatic and Philippine war purposes. The shipyards of the world were never so crowded as they are now. Ships were never wanted in such numbers, and of such enormous tonnage, as now. A great want has suddenly seized the world. The shipyards will be centers of activity until this extraordinary demand is met. New yards are being established and a fever of anxiety prevails to secure facilities to reach the farthest corners of the world in the shortest time with the largest loads.

Out of all this must come, as it is coming, a lower rate or cost for the carriage of freights from one country to another. International trade will become a giant factor in the world's growth. Heretofore comparatively little of the production of each country has been exported. Hereafter the exports will increase. The expansion has started. It will grow amazingly. International trade is to be one of the mighty levers by which the world's expansion and growth into a higher existence and a broader civilization is to be effected.

The railroads have in a century accomplished more for humanity than had been accomplished in a thousand years. The next agency in the order of Providence and Evolution is—ships. The railroad builder has led civilization for decades and his work is by no means done. The ship builder and the ship navigator are the coming men to whom the world will be indebted for the next great onward stride, for which a half dozen past decades have been but the preparatory school.

The European agents for American apple-parers have nothing but the best words to send home as to their service among bakers, hotel keepers, and wherever they are sold. European agents will find it worth while to give some attention to this valuable and easy-selling device.

TRADE FACILITIES.

No one knows better than the foreign dealer what the difficulties are in the way of increasing the use of American manufactured products abroad. Despite these difficulties wonderful progress is being made. The various commercial and manufacturing bodies interested in the export trade have plans under consideration which have for their object the removal of obstructions to greater trade, among which are better and more direct banking and shipping facilities, the modification of bills of lading to be more in consonance with trade interests, etc. The United States has for a century been chiefly concerned with its own development. It is only within a quarter of a century that its attention has been more prominently directed to the trade of the world. Other nations have been striving for the world's trade always. It is not strange, therefore, that the manufacturers of the United States should discover that they can cater to the wants of all nations. Those who are familiar with American character can rest assured they will not have long to wait for freer commercial pathways. Ships, banks, parcels-post, treaties, warehouses, agencies, newspapers, all will come and take their place in the great work of placing the United States on an equal footing with the other nations of the world in the race for her share of the world's trade.

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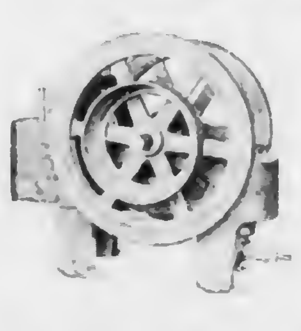

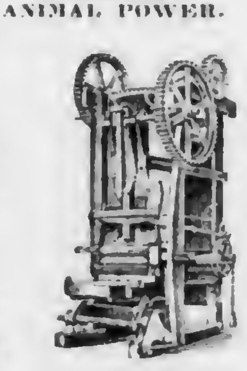

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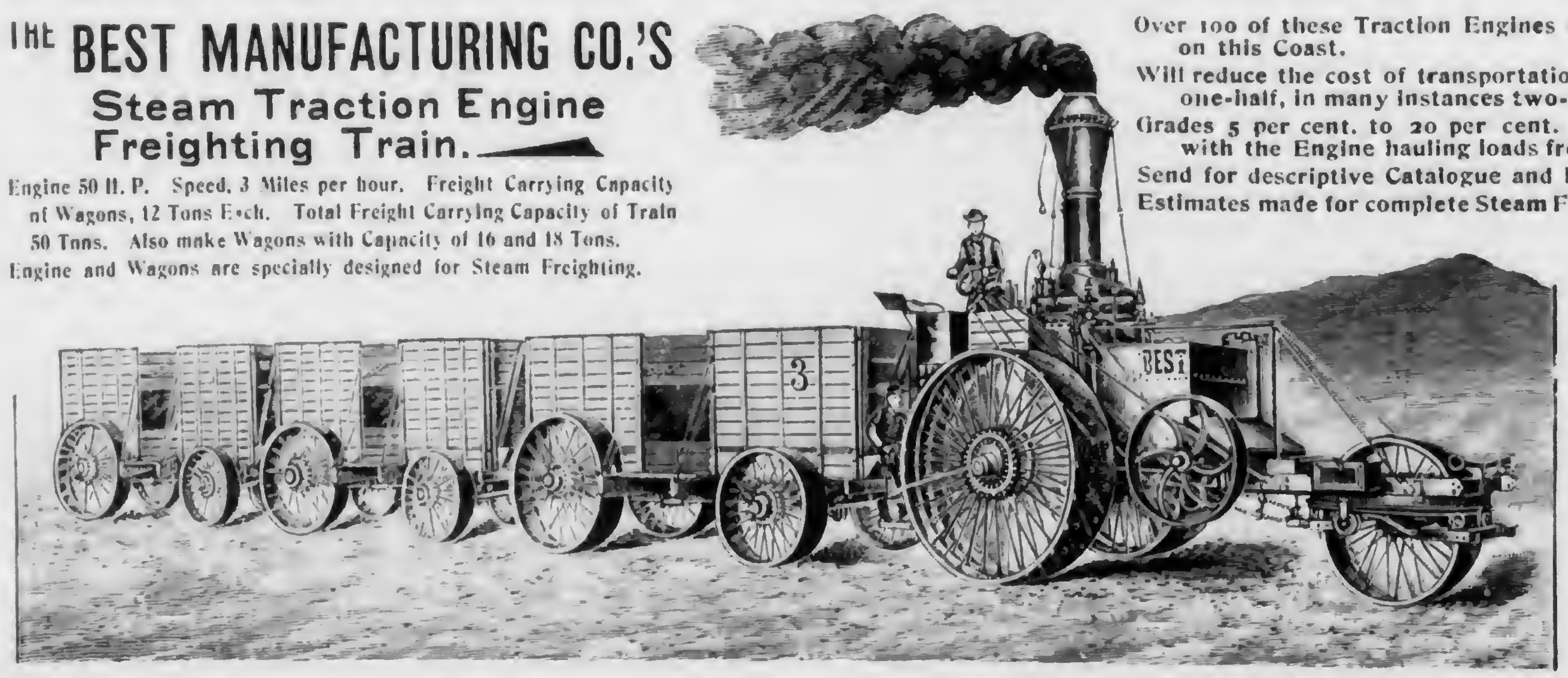

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Wenn die Länder Handel treiben und ihre Produkte gegenseitig austauschen, schreitet die Civilisation vorwärts.

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INTENTIONAL SECOND EXPOSURE

Die amerikanischen Getreidesäemaschinen umfassen ein weites Feld, und die Drill- und Dibbelmaschinen sind beachtenswerte Erzeugnisse moderner Maschinbaukunst. Ein klares Verständnis derselben ist jedoch ohne Beihilfe von Katalogen unmöglich. Die vielen kürzlich erst durchgeführten Verbesserungen derselben verdienen die vollste Würdigung der Exporteure. Sie können auf Verlangen auch in den kleinsten Dimensionen geliefert werden. Einige der leichtesten und verwendbarsten Drillmaschinen sind sechsreihig und nach dem Hauen-, Shuh- oder Scheibensystem gebaut.

Was in Mexico betreffs direkten Verkehrs zwischen Grosshändlern in landwirtschaftlichen Geräten und Maschinen und deren Fabrikanten in den Vereinigten Staaten von Nord-Amerika gethan wird, das könnte überall geschehen. Mexikanische Firmen huldigten seit Jahren einer umständlichen Geschäftsgebahrung, in Folge deren ihr Verdienst zusammenschrumpfte. Seitdem sie jedoch in direkten Verkehr traten, kaufen sie ihre Geräte aus erster Hand zu den niedrigsten Preisen, geniessen die Begünstigung billigster Fracht und kürzester Transportlinien, und finden am Ende der Kampagne, dass sie weit mehr Geschäfte gemacht und bedeutend grössere Summen verdient haben. Es liegt keine Veranlassung vor, weshalb das gleiche Geschäftsverfahren nicht auch von Händlern anderer Länder im Verkehr mit den Vereinigten Staaten von Nord-Amerika eingeführt werden könnte. Die amerikanischen Industriellen wünschen dringend, mit ihnen in engere Verbindung zu treten und sind bereit, zur Förderung dieses Zweckes keinerlei Mühe zu scheuen. Weitere Vorteile würden von selbst folgen, wie z. B. die genaue Feststellung der besonderen Anforderungen jedes fremden Landes. Direkte Verbindungen sind eine dringende Notwendigkeit und können nicht frühe genug Beachtung erfahren

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Ein Hauptgrund für den anerkannten Wert amerikanischer Geräte, die sich in der ganzen Welt so grosser Beliebtheit erfreuen, liegt darin, dass die meisten derselben in ihren einzelnen Bestandteilen durch unfehlbar arbeitende Maschinen hergestellt werden, die von tausend bis zu zehntausend in jeder Beziehung durchaus gleichartige Stücke oder Bestandteile liefern. Eilfertigkeit, Nachlässigkeit und Versehen sind absolut ausgeschlossen. Die menschliche Hand kann ausgleiten oder ermüden und somit eine minderwertige Arbeit liefern, aber die Maschine bleibt sich stets gleich, denkt nie, gleitet nie aus; und dieser Umstand hat in hohem Grade dazu beigetragen, amerikanische Geräte zu dem zu machen, was sie sind. Jeder einzelne Teil wird untersucht und geprüft, und sind die Teile zusammengestellt, so repräsentiren sie das beste Material, die höchste Kunstfertigkeit und vollkommenste Nutzanwendung. Dieses Fabrikationsverfahren schliesst Defekte und Schwächen aus und eifert zur höchsten Leistung an, da die Aufmerksamkeit sich ausschliesslich auf einen einzigen Bestandteil koncentrirt. Das Resultat hiervon ist notwendigerweise eine bedeutende Verbesserung des zur Herstellung der einzelnen Teile dienenden Mechanismus, und wenn die zusammengestellte Maschine zur Anlegung der letzten Hand in die Anstreicherei gebracht wird, ist sie in der That ein Triumph mechanischen Scharfsinns und ein Bild der Vollkommenheit.

ARBEIT UND MASCHINERIE.

Die Grundlage der Landwirtschaft, wie sie in den Vereinigten Staaten von Nord-Amerika betrieben wird, ist, wenn wir so sagen dürfen, die "extensive," in Europa dagegen die "intensive" Wirtschaft. Das amerikanische Ideal ist die Bearbeitung einer möglichst grossen Fläche, während in Europa "höchste Kultur" obenan steht. Die Idee der extensiven Bewirtschaftung bedingte die Beischaffung von Maschinen und Geräten, die grösstmögliche Arbeitsleistung bei geringsten Kosten gewähren. Die intensive Bewirtschaftung, die in den Ländern der alten Welt vorherrscht, hält dagegen natürlich an der Handarbeit fest und bringt der Mitarbeit der Mechanik weniger Interesse entgegen. Im Anfang der Einführung amerikanischer Geräte und Maschinen zu Wirtschaftszwecken im Auslande stand die Idee der Intensität denselben ganz ausnahmsweise feindlich gegenüber; doch als die Vorteile mechanischer Hilfsmittel sichtbar wurden, ward nach und nach zur Einführung von Maschinen geschritten. Dieselbe ging jedoch notwendigerweise langsam vor sich, da die engen und scharf begrenzten Flächen, die dem einzelnen Landwirt zur Verfügung standen, hierzu nicht sehr geeignet erschienen, und der Landwirt dieselben früher ohne Maschine so zu bearbeiten im Stande war, dass sie seinen dringendsten Bedürfnissen genügten.

Seit dem Auftreten neuer Faktoren haben sich indess die engen Grenzen der Landgüter fremden Länder erweitert und so dem Gebrauche von Maschinkraft günstige Verhältnisse herbeigeführt. Diese Faktoren waren, und sind noch immer, die Eisenbahnen, die die entferntere Märkte erschliessen, und die erhöhte Nachfrage, die dem Umstand zuzuschreiben ist, dass sich ein grösserer Bruchteil der Bevölkerung industrieller Arbeit widmet.

In den Vereinigten Staaten von Nord-Amerika zeigen sich an manchen Orten die Zeichen einer nahen Rückkehr zu intensiven Wirtschaftsmethoden, die sich auf natürliche Weise in einer gewissen Abänderung landwirtschaftlicher Maschinen und Geräte kundgiebt, welche den Wünschen der Benützer derselben entgegenkommt. So schlagen Europa und die Vereinigten Staaten in dieser Beziehung die gleiche Richtung ein, obwohl die näheren Umstände in beiden Ländern wohl niemals die gleichen sein können.

Die hieraus zu ziehende Moral ist, das mit dem Anwachsen der mehr und mehr erbitterten Koncurrenz Europa die zu derselben unumgänglich nötigen mechanischen Hilfsmittel aus den Fabriken Amerikas beziehen muss. Warum sollten diese aber nicht in England zu finden sein, wo die herrschenden Zustände denen des europäischen Kontinents so sehr gleichen? Einfach deshalb, weil England hierzu keine Unternehmungslust besitzt, die dagegen in den Vereinigten Staaten von Nord-Amerika entschieden vorhanden ist. Der in Amerika herrschende Ueberfluss an Land fordert zu Erfindungen auf, die die Benützung desselben ermöglichen, und die grösstmögliche Ausnützung auch des kleinsten Besitzes gestatten; allgemeine Koncurrenz, die in England, wo Grund und Boden nur in beschränktem Maasse vorhanden sind, in diesem Sinne nicht existirt, zwingt hierzu.

Daher ist es eine logische Schlussfolgerung, dass in Zukunft die ganze Welt in Bezug auf Verbesserung von Geräten und Maschinen von den Vereinigten Staaten von Nord-Amerika abhängen wird, da dieselbe zum wissenschaftlichen Betriebe der Landwirtschaft unentbehrlich ist, und wirkliche Fortschritte in diesem Gewerbe nur an der Hand der Wissenschaft gemacht werden können.

EIN WORT AN HÄNDLER IM AUSLANDE.

Der Eisenbahnbau ist in gewissen Ländern ein mächtiger Faktor, der die Bodenkultur auf eine Stufe zu bringen verspricht, von der man sich hierzulande oder in der Fremde gewiss noch nie zuvor etwas träumen liess. Es ist kaum drei Jahre her, dass im Ausland der Bau von Eisenbahnen in grossem Massstabe systematisch in Angriff genommnen wurde. Jeder Monat bringt neue Unternehmungen dieser Art in Mexico, Central-Amerika, Süd-Amerika, Afrika, Süd-Asien und auf den Inseln des Weltmeers zur Blüte. Wir lenken die Aufmerksamkeit der Händler im Auslande, die sich mit landwirtschaftlichen Geräten und Maschinen befassen, auf die hohe Bedeutung dieses Umstandes. Diese Aera des Eisenbahnbaues in den minder bedeutenden Ländern der Welt kommt einer fortschrittlichen Umgestaltung der gegenwärtig bestehenden Verhältnisse gleich; sie ist mit Allem, was Fortschritt heisst, identisch; sie bedeutet, dass zehn bis fünfzig Geräte dort zu finden sein werden, wo heute kaum eines existirt. Sie bedeutet breite Aecker unter systematischer, wissenschaftlicher Kultur, wo heutzutage Röhricht, Sümpfe und stellenweise Lichtungen vorherrschen. Diese Veränderung wird früher eintreten, als sich nach den vorhandenen Anzeichen vermuten liesse. Man braucht nur dem Export von Schienen, Lokomotiven, Wagons, Eisenbahn- und Betriebsmaterial nach fast allen Ländern unter der Sonne Beachtung zu schenken, um den Zweck desselben zu begreifen. Eine auch nur annähernd richtige Aufzählung der Eisenbahnunternehmungen, die sich gegenwärtig im Stadium des Werdens befinden, wäre ein Ding der Unmöglichkeit. Amerikanische Schienenfabrikanten stehen gegenwärtig betreffs enormer Sendungen nach dem Ausland in Unterhandlung. Man lasse jedoch die ungeheuren Unternehmungen, an welchen die Kapitalisten von Europa und Amerika interessirt sind, bei Seite, und wende sich der künftigen Bedeutung aller dieser fieberhaften Thätigkeit zu. Was finden wir dann? Einfach, dass die eingeborne Bevölkerung aller dieser Länder langsam, aber sicher auf dem Gebiete der Bodenkultur eine lebhaftere Thätigkeit entfaltet, und mehr aus dem Boden zu ziehen trachtet, und dass sich für einen Ausfluss der Bevölkerung aus dichter bevölkerten Distrikten der Erde nach neueröffneten Landstrichen Gelegenheit bietet, wo das Leben mehr Ueberfluss gewährt und nur dieselbe oder weninger Arbeit erheischt. Das heisst, die Aera des Eisenbahnbaues, die sich jetzt überall an den Grenzen unserer Civilisation geltend macht, bedeutet das Erwachen der umliegenden Völker zu intensiver, systematisch betriebener Agrikultur, zur Gründung feststehender Absatzgebiete für Geräte und Maschinen, zur Aenderung ihrer trägen Lebensweise, zu Sparsamkeit und Fleiss und den Aufschwung der von ihnen bewohnten Länder zu Heimstätten landwirtschaftlicher und industrieller Thätigkeit. Wie schon an anderer Stelle bemerkt wurde, stehen Alle, die als Agenten und Vertreter von Werkstatt und Fabrik thätig sind, vor der herrlichsten Aufgabe, die dem Menschen je gestellt wurde: der Schaffung zahlreicher Faktoren, die die Civilisation in die Ferne zu tragen bestimmt sind.

SELBSTSCHÄRFENDER STAHL.

Warum amerikanische Pflüge allen anderen überlegen sind—Das zu ihrer Herstellung verwendete Material.

Der "innen weiche," oder "selbstschärfende" Stahl, der in den Scharen und Streichbrettern hochfeiner amerikanischer Pflüge zur Verwendung gelangt, ist eines der merkwürdigsten Produkte amerikanischen Erfindungsgeistes. Sein Wert ist für den amerikanischen Landwirt geradezu unschätzbar. Er ist das Dauerhafteste, was es für Schare und Streichbretter überhaupt giebt, und das einzige Material, das sich in leichtem, thonigem Boden, wie er auf den amerikanischen Prairien vorkommt, selbst polirt und reinigt.

Das Streichbrett aus "innen weichem" Stahl ist eine aus drei Schichten bestehende Platte, die zusammengeschweisst und zur erforderlichen Dicke gewalzt ist. Die Mittelplatte (das Centrum) ist aus Weichstahl, der sich nie verhärten kann, während die Aussenplatten aus feinstem Schmelz- oder Werkzeugstahl bestehen, der den höchsten Härtegrad besitzt. Die Vorteile dieses kombinirten Streichbrettes lassen sich am besten verstehen, wenn die Entwicklungsgeschichte des Stahlpflugs in Amerika ins Auge gefasst wird.

Als der jungfräuliche Boden von Illinois und anderen westlichen Staaten Amerikas durch die ersten Ansiedler aufgepflügt wurde, und der rohe Untergrund sich zersetzt hatte, stellte sich heraus, dass Pflüge mit hölzernen oder gusseisernen Streichbrettern, wie sie die "Pioniere" aus dem Osten mitgebracht hatten, nicht verwendbar waren. Der leichte, fette Boden setzte sich an das Streichbrett an, und machte das Pflügen unmöglich. Es wurde jedoch die Entdeckung gemacht, dass ein aus feinstem Klingenstahl angefertigtes Streichbrett sich auch im klebrigsten Boden von anhaftender Erde freihielt. Die ersten, vor 1840 benützten Pflüge waren von Holz, mit Stahlspitzen oder Scharen, und das Streichbrett war mit aus alten Sägen improvisirten Stahlplatten überzogen. Einige Jahre später waren die Pflugmacher schon im Stande, Sägestahlplatten von einer dem Streichbrett entsprechenden Breite anzuwenden, und ausserdem wurde aus England und Deutschland Stahl importirt. In 1847 wurde in Amerika der erste "Pflugstahl" in einer Dicke gewalzt, die ein Holzfutter überflüssig machte. Man fand jedoch bald heraus, dass sogar dieser Stahl nicht immer frei von Erde blieb, wenn man ihn nicht so sehr härtete, dass hierdurch das Streichbrett für den praktischen Gebrauch zu spröde und brüchig wurde.

Im Jahre 1868 erwirkte John Lane, ein Erfinder in Chicago, ein Patent für ein Streichbrett, das bald allgemein eingeführt wurde und das, von einigen seitherigen Verbesserungen abgesehen, den "innen weichen" Stahl der Gegenwart zeigt. Zweck dieser Erfindung war, eine Platte härtesten Gussstahls durch ein Futter aus weichem Eisen zu verstärken; aber da Eisen und Stahl sich beim Erhitzen und Härten nicht in gleichem Maasse ausdehnten und zusammenzogen, wurde die Herstellung des Streichbretts aus drei Platten notwendig. Die äusseren Hartstahlplatten strecken und verkürzen sich in gleichem Maasse, so dass die Ausdehnung und Zusammenziehung sich stets gewissermaassen gegenseitig ergänzen. Die kombinirte Platte lässt sich dann erhitzen, in die richtige Krümmung hämmern und verbiegt sich während des Härtens nicht.

Diese Methode der Fabrikation des Pflugstahls wurde sofort von Pittsburger Eisenwerken erworben, und wird mit geringfügigen Verbesserungen noch heute angewendet. Statt Schmiedeisens wird jetzt Weichstahl für die Mittelplatte angewendet, und in Schweissen und Walzen sind grosse Verbesserungen eingetreten. Durch die sinnreiche Anwendung excentrischer Walzen wird das Streichbrett so gewalzt, dass der äussere, scharfe, zum Schneiden des Bodens bestimmte Rand verdickt wird, wodurch die in der Sprache der Pflüger sogenannte "Doppelklinge" entsteht. "Selbstschärfender" oder "kernweicher" Stahl ist sehr schwierig anzufertigen, da die Vereinigung der Platten die grösste Sorgfalt erheischt; fertiggestellt ist er dagegen merkwürdig gleichförmig und hochfein. Dieser Stahl, der nur in den Vereinigten Staaten von Nord-Amerika producirt wird, verleiht dem amerikanischen Stahlpflug seine überlegene Dauerhaftigkeit, Stärke, Leichtigkeit und vollkommene Glätte, die ihn mit Recht berühmt machen.

AMERIKANISCHE METHODEN.

Das "Export Implement Age" hat von jeher die Notwendigkeit einer weiteren Verbreitung der Kenntnis landwirtschaftlicher Methoden unter den Agronomen der Welt anerkannt. Der in den Vereinigten Staaten von Nord-Amerika gemachte Fortschritt wird durch die landwirtschaftliche Presse, die durch Belehrung und den Austausch von Ansichten und Methoden die Kenntnisse der amerikanischen Landwirte erweitert, wesentlich unterstützt. Die Fabrikanten von Geräten und Maschinen aller Art erwerben sich Kentnisse, Fähigkeiten und Geschick dadurch, dass sie häufige Zusammenkünfte veranstalten und die angestellten Versuche besprechen, wobei Einer dem Anderen seine praktischen Erfahrungen mitteilt. Dieses so freisinnige Verfahren ist durchaus amerikanisch und hat sich als ein gewaltiger Antrieb zur allgemeinen Hebung der Maschinbaukunst erwiesen. Die Landwirte der Vereinigten Staaten von Nord-Amerika sind nicht der Meinung, dass sie mehr von der Landwirtschaft verstehen, wie die Agronomen anderer Länder, aber sie besitzen Erfahrung, entwickeln ihre Methoden und erreichen in verschiedenen Fächern ihres Gewerbes Resultate, die anzustreben den Landwirten anderer Länder nicht schaden, wohl aber vorzüglich zustatten kommen würde. Wären Alle, die amerikanische Geräte in der übrigen Welt einführen, mit amerikanischen Methoden vom Pflug bis zur Ernte vertraut, so würde diese Kenntnis vielleicht sehr zu Nutze kommen, um den Verkauf ihrer Geräte lebhafter zu gestalten, besonders wenn sie im Stande wären, die Vorzüge nachzuweisen und zu demonstriren, die ein System oder Fabrikat vor den anderen auszeichnen. Landwirte bilden sich zuweilen ein, dass sie Alles wissen, aber manche von ihnen sind geneigt, gutem Rat ein williges Ohr zu leihen und sich belehren zu lassen. Hier ist für Gerätehändler Gelegenheit, nicht nur Verkäufer, und zwar sehr erfolgreiche Verkäufer zu werden, sondern auch als Lehrer des Kunstgewerbes und der Wissenschaft in der Landwirtschaft aufzutreten. In der That wird ein solches Vorgehen durch das Vordringen der Agrikultur in neue Regionen, und die mit der steten Erweiterung des Schienennetzes Hand in Hand gehende Eröffnung neuer landwirtschaftlicher Gebiete mehr und mehr zur Notwendigkeit. Agenten, Importeure und Verkäufer müssen dem allgemeinen Fortschritte huldigen, und jedes Hilfsmittel anwenden, um in ihrer Branche Erfolge zu erzielen; die Landwirte darüber aufzuklären, dass ihre Aecker besser kultivirt werden können, ist eines dieser Mittel.

DIE PARISER WELTAUSSTELLUNG.

Die Pariser Weltausstellung gab den amerikanischen Industriellen einen erneuten Antrieb, ihre Geräte und Maschinen den in fremden Ländern existirenden besonderen Verhältnissen anzupassen. Man hat die Thatsache immer anerkannt, dass in landwirtschaftlichen Geräten und Maschinen eine gewisse Anpassungsfähigkeit vorhanden sein müsse, und es ist Zweck und Absicht des amerikanischen Fabrikanten, sich über diese Anforderungen Aufschluss zu verschaffen. Letzterer ist aber durchaus nicht immer mit leichter Mühe zu haben. Engere Verbindung mit dem Ausland öffnet jedoch nach und nach den Amerikanern die Augen. Geräte und Machinen, die man in jüngster Zeit erfand, werden in fast allen fremden Ländern willkommen geheissen. Es giebt allerdings Länder, wie z. B. Mexico, wo die Anpassung an besondere Verhältnisse keine leichte Sache ist, besonders in Bezug auf Pflüge, da die klebrige Beschaffenheit eines grossen Teils der Felder das Tiefpflügen unnötig macht, und andererseits die allgemein eingeführte Bewässerung ein gleich tiefes oder seichtes Pflügen nicht gestattet. Dennoch kommt man der Erfüllung aller dieser Anforderungen immer näher. In dem Maasse, wie die Kenntnis der eigentümlichen wirtschaftlichen Verhältnisse der verschiedenen Länder zunimmt, folgt ihr auch die Anpassung an dieselben auf dem Fusse. Dies bezieht sich jedoch nur auf landwirtschaftliche Zustände: in der Ausrüstung von Maschinwerkstätten ist es dagegen der Europäer, der sich hierin nach der amerikanischen Idee richtet. Landleben und ländliche Bedürfnisse sind aber bei ihm verschieden, und man hält zäh am Althergebrachten fest. Trotzdem ist auch hier ein Fortschritt wahrnehmbar. Amerikanische Fabrikanten besitzen auch noch andere Mittel und Wege um zu erfahren, was eigentlich benötigt wird, und der gute Erfolg ihrer Agenten im Ausland trägt denn auch gute Früchte. Das zu lösende Problem ist riesig und verwickelt, da es gilt, Jahrhunderte alte Gebräuche umzuändern, Gebräuche, die im Volksbewusstsein ebenso feste Wurzeln geschlagen haben, wie die felsigen Bergketten des Landes in der Muttererde. Agenten und Importeure im Auslande fühlen oft, dass der Kampf ein doppelter ist, und dass die Vorführung hochfeiner Maschinen zu niedrigen Preisen zur Erwerbung fester Kunden genügen sollte. Aber der zu bestehende Kampf ist nicht blos das Angebot von etwas Besserem; die dem Mittelmann des 20ten Jahrhunderts in Wirklichkeit gestellte Aufgabe ist von didaktischem, belehrendem Charakter, sie ist ein Anschauungsunterricht: Erziehung durch Demonstration. Die in Aussicht gestellten Vorteile sind gross, wenn auch nicht unmittelbar bevorstehend.

DIE MARTIN'SCHEN ZIEGELEI-MASCHINEN.

Mit diesem Artikel bringen wir Abbildungen zweier Maschinen, die sowohl im Inland als im Ausland weite Verbreitung finden. Die obere Abbildung ist eine getrene Darstellung der neuesten, verbesserten Maschine für die Fabrikation von Bauziegeln, entworfen von der "Henry Martin Manufacturing Company" in Lancaster, Pennsylvania, Vereinigte Staaten von Nord-Amerika. Diese Gesellschaft, deren Präsident Herr Henry Martin ist, hat sich seit fast fünfzig Jahren auf dem Gebiete der Ziegelfabrikation durch den Bau der hierzu nötigen Maschinen sehr hervorgethan und ist heute im Stande, Maschinen zu liefern, die in Bezug auf Einfachheit, Dauer und Leistungsfähigkeit unerreicht dastehen.

Unsere Abbildung stellt eine der "B" Maschinen dieser Fabrik dar, die überall in den Vereinigten Staaten und Canada weit verbreitet sind, so dass sich gegenwärtig bereits mehr als 3,000 in praktischer Verwendung befinden; und diese Zahl nimmt stetig zu, da sich diese Maschinen überall, wo sie eingeführt werden, rasch beliebt machen. Wie bereits erwähnt, sind dieselben sehr einfach konstruirt, was ihnen bei den Ziegelfabrikanten des Auslandes sehr zur Empfehlung dient. Zu ihrer Bedienung ist weder besondere Geschicklichkeit noch grosse Intelligenz nötig, und sie liefern jede Nummer und Grösse von Bau- und Dachziegeln u. s. w.

Jede Maschine wird von erfahrenen Fabriksarbeitern zusammengestellt, und der Generaldirektor der Fabrik, Herr William R. Martin, überwacht jedes Stadium ihres Baues persönlich aufs Sorgfältigste und stellt einen Garantieschein aus.

Alle von den Werkstätten dieser Fabrik versandten Maschinen werden vorher aufgestellt und gründlich erprobt; jeder Bestandteil ist sorgfältig markirt, so dass eine reguläre Maschine nach den gelieferten Abbildungen und Instruktionen von jedem gewöhnlichen Handwerker wieder zusammengesetzt werden kann.

Pläne, die die Anordnung der gesammten Maschinenanlage einer Ziegelei darstellen, wie auch den Bau von Trockengerüsten, Brennöfen u. s. w. erklären, werden auf Wunsch kostenfrei geliefert, wodurch jedermann in den Stand gesetzt wird, sich eine Ziegelei aufs Billigste und Vollständigste anzulegen.

Die oben erwähnte Abbildung stellt eine Maschine zur Herstellung von Lehmziegeln in gesandeten Formen dar; doch ist die Fabrik auch auf die neuesten Bohrmaschinen mit Drahtschnitt, Trockenpressmaschinen, Trocken- oder Feuchtpfannen, kurzum auf alles eingerichtet, was ein Ziegelfabrikant benötigt. Es wird hier alles zur Ziegelei Benötigte fabrizirt

Die untere Abbildung zeigt einen Felsen- und Erzbrecher. Diese nützliche Maschine ist in ihrer Anwendung keineswegs auf die Ziegelei beschränkt, sondern wird auch in Minen, Steinbrüchen und überall da angewendet, wo es sich um die Zerkleinerung von Fels oder Stein handelt. Wie bei der Ziegelmaschine, sind Stärke, Dauerhaftigkeit und höchste Leistung die bei ihrem Bau vorherrschenden Grundsätze. Der Behälter dieser Maschine ist aus einem Stück gegossen, wodurch alle losen oder steckenbleibenden Zapfen und Riegel vermieden werden, die sich so leicht lockern und die Schäfte aus ihrer Richtung bringen, wodurch fast stets längere Stockungen im Betrieb und Reparaturauslagen erwachsen. Auch sind alle übrigen Teile des Brechers wohl proportionirt und sehr schwer, und die Schwungräder sind vollauf gross genug, um selbst bei schwerster Arbeit einen leichten Gang der Maschine zu erzielen.

Die Fabriksverwaltung teilt uns mit, dass sie mehrere Grössen dieser Brecher, wie auch Brecher anderer Art zur Zerpulverung diverser Materialien liefert. Ein vollständiger Katalog aller hier gebauten Maschinen steht Interessenten gern zur Verfügung.

MÄHEMESSER, ERNTEMASCHIN-SICHELN, FINGER Etc.

Die Firma "The Whitman & Barnes Manufacturing Company" wurde in Jahre 1877 begründet, und zwar durch Konsolidirung der Firmen Whitman & Miles, in Fitchburg, Mass., und George Barnes & Co., in Syracuse, New York, wurde von den Mäh-, Ernte- und Garbenbinde-Maschinenbauern sofort als erfahrenste und leistungsfähigste Erzeugerin der Welt anerkannt, die sich der Produktion der zum Schneidapparat oberwähnter Maschinen gehörenden Bestandteile widmet.

Jeder Maschinenbauer oder Benützer der Maschinen weiss, dass der Gebrauchswert dieser Maschinen, seien sie nun Mäher, Ernter oder Garbenbinder, wesentlich von der Beschaffenheit des Schneidapparates abhängt; lange vor ihrer Konsolidirung waren nun beide Fabriken durch die hohe Qualität ihrer Produkte bekannt, die sich in der ganzen Welt zum anerkannten Muster ausgezeichneter Qualität emporschwangen.

Die Konsolidirung dieser Firmen vereinigte die Geschicklichkeit und Erfahrung beider, da die tüchtigsten und erfahrensten Arbeiter in ihrem Verbande blieben, das Material nur das beste war und blieb, der Maschinbetrieb von Jahr zu Jahr vervollkommnet, und die Fabriksanlagen erweitert wurden, so dass der ausgezeichnete Ruf der Vorgeher nicht nur der neuen Firma erhalten blieb, sondern womöglich noch erhöht wurde.

Seit ihrer Konsolidirung hat die "Whitman & Barnes Manufacturing Company" von Zeit zu Zeit neue Industriezweige eingeführt, besonders Drills mit schraubenförmigen Röhren, Federklemmer und Falzen, Dreschtrommelzapfen, Cultivatoren, Rasenmäher und Heu-Elevatoren. Auch wurde die Fabrikation von Gummiwaaren in grossem Maassstabe eingeführt, wozu in der in Akron gelegenen Fabrik sehr vollständige und moderne Einrichtungen für obigen Industriezweig aufgestellt wurden.

Das Centralbureau der Firma befindet sich in Akron, Ohio, Vereinigte Staaten von Nord-Amerika, mit Fabriken (siehe Abbildungen Seite 58) in Chicago, Ill., Akron, Ohio, Vereinigte Staaten von Nord-Amerika, und St. Catherines, Ontario, Canada. Zweiggeschäfte und Magazine befinden sich ferner in New York, N.Y., Syracuse, N.Y., Cincinnati, Ohio, Chicago, Illinois, Kansas City, Mo., Vereinigte Staaten von Nord-Amerika, und in London, England.

Aus dem Ausland einlaufende Briefe sind an das Exportbureau der Firma, 111 Chambers Street, New York, Vereinigte Staaten von Nord-Amerika, oder 140 Queen Victoria Street, London, England, zu richten.

Illustrirte und beschreibende Kataloge auf Verlangen.

HEUPRESSEN.

Maschinen zum Pressen von Heu in Ballen.

Auf Seite 52 bringen wir eine Abbildung der Dederick'schen patentirten Heupresse mit endlosem Riemen, die von P. K. Dederick's Sons, Albany, N. Y., Vereinigte Staaten von Nord-Amerika gebaut wird. Diese Presse arbeitet mittelst Zahnrädern und wird durch einen Treibriemen mittelst Göppel, Lokomobile oder andereweitiger Kraft betrieben. Die Maschine ist von mächtiger Bauart und mit einem automatischen Apparat versehen, der das Betriebswerk auf Wunsch anhält oder in Bewegung setzt. Der Wärter der Dederick Heupresse mit endlosem Riemen hat nichts weiter zu thun, als das Heu in eine grosse, offene Kiste einzulegen, wobei jede Gabel voll sofort zusammengedrückt und in die Presskiste gepresst wird, und die Schnelligkeit dieser Arbeit lediglich von der Raschheit des Einlegers abhängt. Ausserdem besitzt diese Presse alle anderen Vorzüge und patentirten Apparate anderer ohne Unterbrechung arbeitender Pressen, die von dieser Firma geliefert werden. Ihre Leistungsfähigkeit beträgt 900 bis 3,700 Kilo per Stunde, und 9,100 bis 18,200 Kilo per Wagonladung. Sie werden sowohl mit Stahl- als auch mit Holzgehäuse geliefert.

Die obige Firma war die erste, die Heupressen producirte. Der Erfinder, Herr P. K. Dederick, erwarb Hunderte von Patenten für alle Länder. Er erfand die erste horizontale Ballirpresse, die mit Erfolg funktionirte, im Ballirverfahren einen Umschwung hervorrief und somit die Ausnützung der Wagons bis zur aüssersten Tragfähigkeit möglich machte. Statt der bisher gebräuchlichen hölzernen Gestelle werden bei den Dederick'schen Pressen einfache Stahlröhren angewendet, die die Herstellungskosten nur unwesentlich erhöhen und geradezu unzerstörbar sind. Hierdurch wird erhöhte Stärke, Festigkeit, Betriebskraft und leichter Lauf erzielt, und das Gewicht der Maschine um den vierten Teil vermindert, während die Dauerhaftigkeit mehr als vierfach verlängert wird. Dederick Pressen werden in allen Grössen und Arten geliefert, und Tausende derselben stehen seit Jahren auf der ganzen Welt in Verwendung. Ein reich illustrirter Fabrikskatalog steht zu Diensten, und Korrespondenz wird mit Bezugnahme auf die Errichtung von Agenturen erbeten.

Wer bisher in der Einführung Amerikanischer Arbeits- und Fabriksprodukte in fremden Ländern Erfolge verzeichnete, kennt schon lange den Wert, der darin liegt, die oft unwillkürliche Anmassung höherer Fähigkeiten zu vermeiden, die man sich so oft zur Schau zu tragen versucht fühlt. Stolz ist der menschlichen Natur instinktiv zu eigen, und muss respektirt werden. Gewohnheit ist ein Tyrann, und seine Herrschaft muss rücksichtsvoll abgeschafft werden. Es ist die gewöhnlich vorherrschende Neigung des Menschen, nicht mehr zu arbeiten, als unumgänglich nötig ist. Der Geist der amerikanischen Ruhelosigkeit verbreitet sich jedoch über die Welt, und ist dazu bestimmt, alle anderen Nationen zu beeinflussen. Nichtsdestoweniger müssen altgewohnte Verhältnisse, alte Methoden und alte Liebhabereien mit milder, sorgsam leitender Hand angefasst werden, wozu die Erfahrung wohl die beste Art und Weise andeuten wird.

EXPORT IMPLEMENT AGE

POUR LA CIRCULATION À L'ÉTRANGER EXCLUSIVEMENT.

Journal indépendant, dévoué exclusivement au intérêts du commerce d'exportation de machines d'agriculture, pompes, moulins à vent, outils de fermes et de crémerie accessoires.

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Lorsque les pays commercent et échangent leurs produits, la civilisation progresse.

La guerre est actuellement allumée entre les vapeurs faisant le transport du fret, et les prix du fret pour le charbon, le bois de charpente, le fer, etc., son plus élevés qu'ils ne l'ont été depuis nombre d'années.

Ce qui prouve le mieux la prosperité d'un pays, c'est la facilité de ses habitants de commercer avec toutes les parties du monde. La paix et la bonne volonté entre nations sont le plus grand des bienfaits pour les populations.

Un homme nait sur la terre et non pas particulièrement dans tel ou tel pays. Le lieu de naissance est une affaire d'accident. Tous les hommes sont compatriotes jusqu'à un certain point, et ils devraient acheter et vendre sur les marchés les mieux appropriés.

Pour économiser la main d'œuvre, il faut employer les instruments agricoles qui épargnent du travail Le travail à la main peut être bon marché, mais le temps est passé où il pouvait lutter contre la machine. Le fermier doit employer la machine ou les instruments agricoles s'il veut éviter d'être ruiné.

Les Américains sont un peuple de tempérament nerveux. On dit d'eux qu'ils sont toujours pressés. Il ne travailleront pas avec des instruments agricoles imparfaits. Lorsqu'ils engagent les gens d'autres pays à acheter leurs marchandises, c'est avec la confiance que leurs articles sont parmi les meilleurs qui puissent se produire.

Les frets au départ des États-Unis ne sont pas plus élevés qu'au départ de n'importe quel autre pays. La forte demande qui s'est produite pour des navires destinés au transport de matériel de guerre a forcément affecté les prix des frets dans le monde entier; mais les États-Unis possèdent un plus grand nombre de ports que n'importe quelle autre contrée, et leurs chemins de fer forment un réseau serré couvrant tous les États; ce sont là des conditions qui garantissent les meilleurs avantages pour tous les modes de transport et d'expédition, aussi bien par terre que par eau.

Les constructeurs américains de machines agricoles et instruments aratoires ont remporté une large part des prix décernés à l'Exposition de Paris.

Un instrument agricole qui, récemment, a fait l'objet de nombreuses demandes venant de régions nouvelles, est l'arrache pommes de terre. C'est un instrument que le petit fermier peut employer avec profit. Les instruments pour les pommes de terre sont fabriqués d'aprés divers brevets d'invention. Les marchands à l'étranger devraient prendre note de quelques perfectionnements récemment apportés à ces instruments et se mettre en rapport avec les fabricants, dont on trouvera une liste dans chaque numéro de ce journal.

Nos correspondants européens parlent de quelques uns des avantages des lieuses, moissonneuses, faucheuses et râteaux de fabrication américaine: il suffit de signaler ces instruments aux fermiers européens en général pour qu'ils soient employés davantage. Il y a un an, on a fait dans quelques localités de France et d'Allemagne des ventes qu on a considérées comme des ventes d essai. Le résultat cette année est satisfaisant, ainsi que l'indiquent les commandes plus importantes reçues des marchands qui sont à la tête de ce genre de commerce dans les localités en question. Plus la concurrence est vive, meilleur est le résultat pour les moissonneuses américaines.

Ce qu'on exige principalement d'un instrument agricole c'est d'accomplir le travail demandé. Il faut ensuite qu'il soit durable et ne nécessite pas de trop fréquentes réparations. Il doit aussi pouvoir fonctionner rapidement et parfaitement dans toutes les conditions ordinaires. La peinture cache quelquefois des défauts, mais lorsque l'instrument est en service il fait voir bientôt sa valeur réelle. Le négociant qui vend des marchandises devrait toujours se souvenir qu'il doit satisfaire ses clients, et il est de son devoir de ne leur vendre que des instruments de nature à remplir le but qu'ils se proposent. Il y a d'ailleurs toujours de la place pour quelque chose de nouveau et de meilleur, mais le fabricant qui va sur le marché avec un article inférieur ne peut y rester que peu de temps: c'est le mérite des instruments qui les fera toujours vendre.

Les moulins à vent américains sont de plus en plus en demande, mais la demande n'est pas en proportion de la vente aux États-Unis. Dans beaucoup de localités à l'étranger on a encore recours à des méthodes laborieuses, alors que le moulin à vent, si on l'employait, réduirait considérablement le travail. Les marchands d'instruments agricoles ne manquent pas d'esprit d'entreprise en appelant l'attention sur ce précieux auxiliaire des travaux de ferme, mais la force de l'habitude fait peut-être trop souvent retarder l'achat d'un moulin à vent. Dans les régions de l'Europe aû le moulin à vent est trés employé, les fermiers obtiennent, au point de vue du bien être et de la commodité, des résultats qui, s'ils étaient compris par les fermiers dans d'autres endroits, tendraient à propager leur usage. Le moulin à vent est la force motrice de l'avenir pour un grande nombre de services à la ferme. C'est la joie de l'homme pauvre, et c'est l'ami fidèle du fermier riche. Son prix le met à la portée de milliers de personnes qui n'en ont pas encore profité.

Les négociants des autres pays qui achètent des marchandises pour leurs clients, savent parfaitment bien que lorsqu'un client trouve un article avantageux, il n'hésite pas à en informer ses voisins. S'il n'est pas disposé à le faire, ses voisins remarqueront qu'il emploie un instrument agricole différent de ceux qui sont habituellement en usage. Si cet instrument a des mérites, il sera bien vite en demande; mais s'il n'en a pas, le fait ne tardera pas à se manifester. Les fabricants américains qui cherchent à vendre leurs produits le font avec l'idée d'établir un commerce permanent, et les négociants ou marchands étrangers qui vendent des marchandises fabriquées aux États Unis peuvent s'attendre en toute confiance à ne recevoir que des articles de nature à donner satisfaction a ceux qui doivent les employer.

Une personne revenue récemment d'une visite à l Exposition de Paris, et quia fait un voyage en Europe pour savoir où les charrettes pourraient se vendre dans les conditions les plus avantageuses, a acquis la conviction que la charrette américaine légère et solide primera toutes les autres auprès des fermiers européens amis du progrès. Cette personne pense que les charrettes ont rencontré plus de difficultés que la plupart des autres instruments de ferme qui ont pris pied en Europe, mais les progrès réalisés cette année par la charrette américaine parmi les marchands ayant de l'influence, promettent d'amener à partir de ce moment une augmentation de transactions commerciales. Les marchands européens qui ont negligé la charrette américaine, trouveront dans les modèles récemment fabriqués certain perfectionnements qui les recommandent plus énergiquement que jamais au commerce européen et sud-africain. Les fabricants de charrettes américaines se sont conformés strictement aux exigences de l'étranger, et ils fabriquent aujourd'hui des charrettes qu'il suffit de présenter convenablement aux centres agricoles d'au delà des mers pour que le commerce des charrettes prenne, dans leurs affaires en général, une place beaucoup plus importante qu'il n'en a eue jusqu'à présent.

Les marchands à l'étranger s'occupant de la vente des instruments agricoles américains, peuvent être convaincus que la position dominante prise par les États-Unis sous le rapport des méthodes agricoles et des machines agricoles de la plus haute efficacité, sera maintenue. Il n'y a pas sur la terre de pays où l'on étudie avec plus de soin les méthodes et les machines que dans celui qui s'étend entre l'Atlantique et le Pacifique, et le golfe du Mexique. Il y a des écoles d'agriculture dans les trois-quarts des États-Unis. Dans quelques-unes de ces écoles se trouvent des départements d'agronomie où les principaux fabricants envoient des instruments et des machines agricoles de toute sorte pour servir à enseigner aux élèves la mécanique des fermes, et où l'on fait des épreuves et des essais ainsi que des démonstrations. De cette façon, non seulement on démontre les avantages de tel ou tel instrument, mais on fait voir comment les instruments s'adaptent aux diverses circonstances, aux différences de sol et aux nécessités variées. Les fabricants profitent de ces essais et adoptent les perfectionnements nécessaires. Rien n'est perdu, et un millier de concurrents empressés veillent de façon à modifier leur œuvre pour obtenir de meilleurs résultats.

Les chemins de fer s'étendent aujourd'hui des principales villes des États-Unis a Mexico. Le Canada est également relié de près aux États-Unis par des chemins de fer. Nos lecteurs européens seront peut être surpris d'apprendre que le Mexique, le Canada et les États-Unis ont les mêmes tarifs postaux.

Si ceux qui, à l'étranger, s'occupent des instruments agricoles américains veulent se mettre avec zèle à propager les instruments américains dans leurs pays respectifs, ils seront en très peu de temps appuyés par l'esprit d'entreprise américain au moyen de l'établissement de magasins pour y exposer les produits manufacturés venant des États-Unis. Là où ils ont été établis ces magasins ont beaucoup contribué à développer le commerce et à affermir la position des marchands d'instruments agricoles. Les Américans ont l'esprit d'entreprise. L'Association Nationale des Industriels a l'affaire en mains. Qu'on l'encourage et les magasins s'établiront.

L'Exposition de Paris a stimulé le fabricant américain à adapter ses instruments agricoles aux conditions particulières existant dans les pays étrangers. Ce fait a toujours été admis, que les instruments agricoles devaient, jusqu'à un certain point, être adaptés aux conditions particulières. Le fabricant américain a cherché à savoir quelles étaient les exigences à satisfaire. Les renseignements n'ont pas toujours été faciles à obtenir. Mais des relations plus développées ont peu à peu ouvert les yeux des américains. On a constaté que les instruments agricoles de fabrication récente étaient bien accueillis dans presque tous les pays étrangers. Il y a quelques pays, comme le Mexique, où il n'est pas facile d'adapter les instruments aux conditions particulières, surtout en ce qui touche les charrues, à cause de la nature gluante de cette partie du sol où un labourage profond est inutile. En outre, le développement du système d'irrigation n'exige pas le même degré ou la même espèce de labourage. A tous ces points de vue, on s'applique constamment à satisfaire les exigences. A mesure qu'on connait mieux les conditions agricoles particulières aux différentes pays, l'adaptation se fait. Cela s'applique, d'ailleurs, aux intérêts agricoles. Sous le rapport de l'installation des ateliers à machines, l'Européen qui s'accommode à l'idée américaine. Mais la vie et les nécessités de la ferme sont différentes, et les vieilles habitudes persistent avec tenacité. Malgré cela, il y a progrès. Les fabricants américains découvrent d'autres moyens de savoir ce qu'on veut, et leur réussite, à l'aide de la coopération d'agents à l'étranger, produit de bons résultats. C'est un problème gros et compliqué que celui qui consiste à changer des habitudes remontant à des siècles, habitudes presque aussi solidement enracinées que les montagnes aux arêtes rocheuses qui forment l'horizon. Les agents et les importateurs à l'étranger éprouvent souvent l'impression que la lutte a un caractère double, et que la présentation sur le marché d'instruménts agricoles supérieurs à bas prix, devrait suffire pour attirer les clients. Mais la lutte à engager ne consiste pas simplement à offrir quelque chose de mieux. L'œuvre véritable qui s'offre à l'agent intermédiaire du vingtième siècle est une œuvre d'éducation, de démonstration. L'entreprise est fort engageante, même si elle ne doit pas donner de résultats immédiats.

TRIBUT PAYÉ AUX INSTRUMENTS ARATOIRES FABRIQUÉS AUX ÉTATS-UNIS.

Un journal consacré aux instruments aratoires, qui se publie à Sarnia (Canada) sous le titre de "Farm Machinery" (Mécanique Agricole), disserte sur ce fait assez curieux que l'existence d'un droit de douane de 20 pour cent sur les instruments aratoires provenant des États-Unis n'empêche pas les fermiers canadiens de faire des achats importants chez les constructeurs des États-Unis. Voici comment il présente la question :

"En 1899 il a été importé au Canada pour $1,095,000 (Fr.5,475,000) d'instruments aratoires et machines agricoles ; sur cette somme, les fermiers de l'Ontario ont payé $347,133 (Fr.1,735,665) pour des moissonneuses, les fermiers du Manitoba $252,980 (Fr.1,264,900) et ceux des territoires du Nord-Ouest $49,671 (Fr.248,355). Sous le régime de l'ancien tarif de 35 pour cent, en 1894, les importations de moissonneuses, faucheuses, charrues, semoirs, avaient atteint un chiffre de $128,593 (Fr.642,965): on voit donc que, depuis l'abaissement des droits en 1895 jusqu'à 20 pour cent, les importations de cette catégorie d'articles ont augmenté de plus de 700 pour cent sur 1894. Cet accroissement dans les importations représente bien plus que l'accroissement de la demande dû à l'usure du vieux matériel et à l'ouverture à la culture de nouveaux territoires, et semble par suite réfléchir une diminution des ventes opérées sur le marché national au profit de la fabrication indigène."

"Quelle cause assigner à cet accroissement disproportionné dans l'importation ? Serait-ce que les machines américaines passent pour meilleures ? Cela semble peu probable. Le matériel américain est il mis sur le marché, frais d'importation payés, moins cher que le matériel de fabrication canadienne ? Si tel est le cas, comment la chose peut-elle être possible à moins qu'elle ne résulte du meilleur marché des matières premières et de l'adoption de méthodes administratives plus fécondes au point de vue de la production dans les ateliers ? Serait-ce, enfin, que les industriels des États-Unis se donnent plus de peine pour leur clientèle et ont leur système de ventes mieux et plus puissamment organisé ? Au milieu de toutes ces questions, il en est une à laquelle il semble que la réponse vienne toute seule et sans hésitation : c'est que la fabrication américaine est à même de produire ses machines à meilleur compte : par conséquent, le droit de 20 pour cent n'est pas assez élevé pour l'empêcher de faire aux constructeurs canadiens de machines et instruments de culture une concurrence à armes plus qu'égales sur leur propre territoire."

En dépit du droit de douane qui frappe les importations d'instruments aratoires en provenance des États-Unis pour le Canada, ces importations ne font que s'accroître chaque année. Certes, nous sommes loin d'accepter toutes les assertions qu'on vient de lire, mais il en résulte l'aveu que la culture canadiene peut acheter son outillage aux États-Unis à meilleur compte que sur place, quoique le Canada possède de vastes fabriques en bon nombre, et cela sous le régime d'un tarif protecteur élevé qui devrait suffire pour exclure toute fabrication étrangère. Le fin mot de la chose, c'est que le cultivateur canadien sait ce qu'il veut, ce qu'il lui faut, et se rend compte de la façon d'acheter dans les meilleures conditions possibles : en conséquence il achète aux fabriques américaines, malgré l'offre des fabriques établies tout autour de lui dans son pays, malgré le tarif qui protège la fabrication canadienne. C'est là une situation qui prouve une chose : c'est que l'outillage américain de culture, instruments et machines, est bien construit, bon marché, solide, durable et rend d'excellents services ; s'il en était autrement, il n'existerait pas de demande en sa faveur.

DÉTAILS D'INSTALLATION DANS LES FABRIQUES DES ÉTATS-UNIS.

Le dernier envoi de machines agricoles américaines partant pour l'étranger renferme toujours dans toutes ses machines, à quelque catégorie qu'elles appartiennent, les derniers perfectionnements. Le même soin, la même attention, le même souci des détails qui éclatent dans les grandes machines de culture, se retrouvent au même degré dans tous les petits outils mécaniques destinés à la petite culture.

Il est encore un autre point qu'il ne faut jamais oublier. C'est que les ateliers des usines américaines sont l'object de la plus grande attention, de l'inspection la plus stricte de la part de la direction. Tous les accessories nécessaires, bancs, outils, mécanismes divers, détails d'outillage, dispositifs de toute espèce pour attaquer l'ouvrage et lui donner le fini voulu, tout cela est étudié, éprouvé, modifié fréquemment, constamment maintenu au plus haut degré de perfection et dans les meilleures conditions de service.

Ainsi les ateliers américains de construction de machines sont maintenus au même niveau élevé de progrès et de perfectionnement que les machines américaines elles-mêmes. Il en résulte, pour le négociant étranger, l'existence d'une fondation solide sur laquelle il peut construire en toute sûreté l'édifice de son commerce en machines de fabrication américaine. Les maisons industrielles dont les noms paraissent dans nos colonnes de publicité possèdent toutes d'immenses usines, pourvues de l'outillage moderne le plus complet. Mettez-vous en relations avec elles.

Ce qui se fait au Mexique, au point de vue des transactions directes entre les marchands en gros et en détail d'instruments agricoles et les fabricants de ces instruments aux États-Unis, peut être fait ailleurs par ceux qui font le commerce d'instruments agricoles. Pendant des années les marchands mexicains ont traité les affaires par une voie détournée, dans laquelle leurs bénéfices diminuaient. Depuis qu'ils traitent directement, ils achètent leurs instruments agricoles de première main, ils obtiennent les prix les plus bas, ils profitent des prix de transport les plus réduits et des voies les plus directes, et ils arrivent à la fin de la saison ayant fait un plus grand nombre d'affaires et ayant gagné beaucoup plus d'argent. Il n'y a pas de raison pour que les mêmes méthodes commerciales ne puissent pas s'établir entre les marchands des autres pays et les États-Unis. Les fabricants américains désirent beaucoup entrer en relations directes et feraient des efforts particuliers pour développer ce genre de commerce. Il en résulterait d'autres avantages, notamment celui de connaître exactement ce qu'il faut dans chaque pays étranger. Il y a urgence à établir des relations directes, et les marchands ne donneront jamais trop tôt leur attention à cette question.

ACIER A "CENTRE DOUX."

Pourquoi les charrues américaines sont supérieures à toutes les autres.—Les matières qui entrent dans les charrues.

L'acier à "centre doux" employé dans l'oreille de la charrue ou versoir des charrues américaines de première qualité, est un des produits remarquables du génie inventif américain. Il est devenu d'une valeur incalculable pour le fermier. C'est la forme d'acier la plus durable connue pour un versoir, et c'est la seule matière qui "se cure" ou se nettoie d'elle-même dans les terres argileuses légères, comme on en trouve par exemple dans les prairies américaines.

Le versoir en acier à "centre doux" est une plaque composée, faite de trois plaques d'acier qui sont soudées les unes aux autres et laminées à l'épaisseur voulue. La plaque du milieu, ou centre, est en acier doux, qui ne se trempe pas, tandis que les plaques de devant et de derrière sont en acier fondu au creuset le plus fin, ou acier à outils, qui peut recevoir la plus forte trempe. On comprendra mieux les avantages de ce versoir composé en étudiant le développement de la charrue en acier en Amérique.

Lorsque le sol de la prairie de l'Illinois, ou des autres Etats de l'Ouest de l'Amérique, a été labouré pour la première fois par les premiers colons et que l'herbe sauvage s'est décomposée, on a constaté que les charrues avec des versoirs en bois ou en fonte lesquelles les pionniers avaient apportées avec eux, ne pouvaient pas servir. La terre légère et grasse s'attachait au versoir, et le labourage devint impossible. Mais on a découvert qu'un versoir fabriqué avec de l'acier à outils d'une qualité très fine se nettoyait lui-même et dans le sol le plus gluant. Tout d'abord, avant 1840, les charrues se faisaient en bois, avec des pointes ou socs en acier, et le versoir était couvert de plaques d'acier improvisées avec de vieilles scies. Quelques années plus tard, les fabricants de charrues ont pu se procurer des plaques d'acier à scie, de la largeur voulue pour des versoirs, et de l'acier a été importé également d'Angleterre et d'Allemagne. En 1847, la première "charrue en acier" a été laminée en Amérique, à une épaisseur rendant inutile le bois qui supportait l'acier. Mais on a bientôt reconnu que même cet acier ne se nettoyait pas toujours de lui-même, à moins d'avoir une trempe si forte que le versoir devenait trop fragile pour le service de la ferme.

En 1860, M. John Lane, un inventeur de Chicago, a pris un brevet pour une forme de versoir qui est devenu bientôt d'un usage général et qui est, avec quelques perfectionnements, l'acier á "centre doux" d'aujourd'hui. L'idée de cette invention était de renforcer une plaque d'acier le plus dur, fondu au creuset, avec un doublage de fer doux, mais comme le fer et l'acier ne se dilataient pas et ne se contractaient pas ensemble dans le chauffage et la trempe, il a été nécessaire de faire un versoir en trois plaques. Les plaques en acier fondu au creuset de devant et de derrière se dilatant et se contractant ensemble, maintenaient l'équilibre, pour ainsi dire. La plaque composée, pouvait alors être chauffée, martelée de façon à lui donner la courbure voulue et trempée, sans gauchir.

Ce procédé de fabrication de la charrue en acier a été adopté immédiatement par des acieries de Pittsburg, et il est en usage aujourd'hui avec quelques modifications. On emploie maintenant pour la plaque du centre de l'acier doux au lieu de fer forgé, et de grands perfectionnements ont été apportés au procédé de soudage et de laminage. Grâce à l'emploi ingénieux de cylindres excentriques, le versoir est laminé de façon à ce que l'arète de devant ou tranchante soit plus épaisse, ce qui donne ce qu'on appelle dans le monde des laboureurs le "double tibia."

L'acier à "centre doux" est un produit très difficile à manier, exigeant les plus grands soins pour assurer l'union parfaite des plaques, mais l'acier une fois fini est remarquable pour son uniformité et sa qualité supérieure. Cet acier, qui ne se fabrique qu'aux États-Unis, donne aux charrues américaines la supériorité à laquelle elles doivent leur renommée, tant au point de vue de la durabilité et de la solidité, sans que le poids soit embarrassant, qu'à celui de la façon parfaite dont elles se nettoient d'elles mêmes.

QUELQUES MOTS AUX MARCHANDS À L'ÉTRANGER.

La construction des chemins de fer dans les pays étrangers est appelée à être le puissant facteur qui conduira à la culture du sol sur une échelle qu'on n'avait jamais rêvée ici ou au dehors. C'est seulement depuis trois ans que la construction de chemins de fer sur une vaste échelle a été systématiquement entreprise dans beaucoup de pays étrangers. Chaque mois amène de nouvelles entreprises au Mexique, dans l'Amérique Centrale, dans l'Amérique Méridionale, en Afrique, dans l'Asie Méridionale et dans les îles situées dans les océans. C'est sur la signification de tout cela pour les marchands d'instruments agricoles à l'étranger qu'on appelle l'attention. Cette ère de construction de chemins de fer dans les plus petits pays du globe indique une transformation en mieux de l'état de choses existant. Elle signifie tout ce qui veut dire progrès. Elle présage de dix à cinquante instruments agricoles là où il y en a un aujourd'hui. Elle promet de vastes champs cultivés méthodiquement et scientifiquement là où il n'y a aujourd'hui que des fourrés et des marais avec seulement quelques parcelles défrichées. Le changement se produira plus tôt que les apparences ne l'indiquent. On n'a qu'à suivre les exportations de rails, de locomotives, de wagons, de matériel et de fournitures de chemins de fer pour presque tous les pays éclairés par le soleil pour comprendre ce que cela veut dire. Même la simple énumération des entreprises de construction de chemins de fer actuellement en cours serait impossible. Les propriétaires d'usines où se fabriquent les rails américains négocient en ce moment d'énormes expéditions à l'étranger. Laissant de côté l'importance de l'œuvre de construction des chemins de fer, dont s'occupent les capitalistes d'Amérique et d'Europe, mais en examinant ce que cela signifie en pratique, que voyons-nous? Simplement que la population indigène de tous ces pays déploie graduellement plus d'activité en faisant produire au sol de quoi la nourrir, et nous entrevoyons la possibilité d'une émigration de gens, venant de parties du globe où la population est plus dense, vers les nouvelles régions où la vie matérielle est plus facile avec des efforts égaux ou moindres. En un mot, l'ère de construction de chemins de fer qui s'étend actuellement sur toute l'arrière-garde de notre civilisation, signifie qu'il faut inculquer à ces populations l'idée du travail agricole plus large et plus systématique, de façon à développer et à créer des marchés permanents pour les instruments agricoles et les machines, qu'il faut changer leurs habitudes, les faire passer de l'inactivité à l'activité, de l'inertie à l'industrie, et transformer les pays qu'elles habitent en en faisant de ce qu'ils sont aujourd'hui des régions d'activité agricole et industrielle. Comme on l'a dit ailleurs, ceux qui occupent la position d'agents et de vendeurs des produits des ateliers et des fabriques ont devant eux l'œuvre la plus grande qu'il ait jamais été donné à l'homme d'entreprendre au point de vue de la propagation d'agences de civilisation.

MÉTHODES AMÉRICAINES.

L'EXPORT IMPLEMENT AGE a depuis longtemps reconnu la nécessité d'une plus grande propagation de la connaissance des méthodes agricoles parmi les agriculteurs du monde entier. Les progrès faits en agriculture aux États-Unis ont été considerablement favorisés par la presse spéciale à la ferme, qui, par ses enseignements et ses échanges de vues et de méthodes, a propagé le savoir parmi les fermiers des États-Unis. Les fabricants d'instruments agricoles et de machines de toute sorte ont augmenté leurs connaissances, leurs capacités et leur habileté en se réunissant fréquemment et en comparant le résultat de leurs expériences, chacun d'eux disant aux autres ce que la pratique lui avait appris. Cette méthode libérale est essentiellement américaine, et elle a fait l'office d'un gigantesque levier pour élever le niveau général du savoir. Les fermiers des États-Unis ne se considèrent pas comme plus savants en matiére d'agriculture que les fermiers d'autres pays, mais ils ont de l'expérience, et, dans plusieurs genres, ils ont développé des méthodes et obtenu des résultats que les fermiers d'ailleurs devraient connaître ; cela ne leur nuirait pas et pourrait peut-être leur profiter. Si ceux qui présentent les instruments agricoles américains sur les marchés étrangers étaient bien au courant des méthodes américaines d'agriculture, depuis le labourage jusqu'à la récolte, ils trouveraient peut-être que cette connaissance les aide à pousser la vente de leurs instruments, surtout lorsqu'ils pourraient faire ressortir et démontrer les avantages d'une forme ou d'un modèle sur un autre, au point de vue du travail à accomplir. Parfois des fermiers s'imaginent qu'ils savent tout, mais beaucoup sont disposés à écouter et à s'instruire. Il y a moyen ici pour les marchands d'instruments agricoles de devenir non seulement des vendeurs, et des vendeurs réussissant très bien, mais aussi des professeurs de l'art et la science de l'agriculture. Par le fait, des services de ce genre deviennent d'année en année plus nécessaires, à mesure que l'agriculture pénètre dans de nouvelles régions et met en culture de nouveaux territoires avec les progrès de la construction des chemins de fer. Les agents, les importateurs et les vendeurs doivent, à mesure que nous faisons des progrès, employer tous les moyens propres à les aider à pousser leurs affaires, et un de ces moyens est d'éclairer les fermiers sur la meilleure façon de cultiver leurs terres.

LES MACHINES MARTIN À FAIRE LES BRIQUES.

Nous donnons, concurremment avec cet article, les gravures de deux machines qui se vendent beaucoup aux États-Unis comme à l'étranger. La vignette supérieure est un fac-simile de la dernière machine perfectionnée pour la fabrication des briques à bâtir, établie par la maison Henry Martin Brick Machine Manufacturing Company, de Lancaster, Pensylvanie. Cette compagnie, en la personne de son président, M. Henry Martin, s'occupe activement de la fabrication des briques et de la construction de machines à faire les briques depuis près de cinquante ans, et aujourd'hui elle présente au monde une machine qui est sans égale au point de vue de la simplicité, de la durabilité et de la somme de travail accomplie.

La gravure sur page 42 fait voir une de ses machines modèle "B," qui a été adoptée sur une si grande échelle dans tous les États-Unis et au Canada; plus de 3,000 de ces machines ont été mises en usage pratique, et partout où elles ont été employées il en est résulté de nouvelles ventes. Comme il est dit ci-dessus, ces machines sont très simples de construction, ce qui les recommande aux fabricants de briques à l'étranger. Elles n'exigent pas d'ouvrier habile, ni même intelligent, pour les faire fonctionner, et elles font tout sorte de dimensions différentes de briques, tuiles, etc.

Chaque machine est construite par des artisans experts, et chaque phase de la construction est soigneusement et personnellement surveillée par le directeur général de la compagnie, M. Wm. R. Martin; une garantie accompagne chaque machine.

Toutes les machines expédidées de l'usine de la maison Martin Company sont montées et complèment éprouvées avant leur expédition: chaque pièce est soigneusement marquée, de sorte que tout mécanicien ordinaire peut remonter la machine d'après les dessins et les instructions qui sont fournies.

Avec chaque expédition, on fournit sans frais aucuns des plans indiquant la façon d'arranger toute la machine dans le chantier, en même temps que des plans pour l'érection de rayons et de fours à sécher, etc., si l'on désire ceux-ci, ce qui permet à n'importe qui d'installer une fabrique de briques avec le moins de frais possible.

Alors que la gravure en question fait voir une machine pour la fabrication des briques par le procédé à terre molle avec faces recouvertes de sable, cette compagnie est prête à fournir les machines à pressez à sec, des cuves à sec ou à eau, et par le fait tout ce qui est nécessaire à un fabricant de briques; c'est là la devise de la compagnie.

Le dessin inférieur représente un concasseur à pierres et à minerais. Cette machine si utile ne s'emploie non seulement dans les fabriques de briques, mais aussi dans les mines, les carrières et partout où il y a des quartiers de rocs ou des pierres à réduire en morceaux. Elle est construite comme la machine à faire les briques, au point de vue de la solidité et de la durabilité, et pour donner un rendement complet. Le bâti de ce concasseur est fondu d'une seule pièce, n'ayant aucun de ces raccords détachés au boulonnés qui sont si susceptibles de jouer et de mettre les arbres hors d'aplomb, ce qui presque toujours amène une avarie grave et par suite exige une dépense pour les réparations. Puis, les autres pièces du concasseur sont également bien proportionnées et très solides, les volants étant suffisamment larges pour faciliter le fonctionnement de la machine lorsqu'elle accomplit un travail des plus durs.

La compagnie nous informe qu'elle construit ces concasseures en plusieurs dimensions différentes, ainsi que d'autres modèles propres à pulvériser diverses matières; et comme elle publie un catalogue complet des articles qu'elle fabrique, nous engageons nos amis à lui demander des renseignements complets, qui leur seront condialement fournis.

MACHINES À METTRE LE FOIN EN BALLES.

Nous publions à la page 52, un dessin représentant la presse continue à courroie brevetée de Dederick, fabriquée par la maison P. K. Dederick's Sons, à Albany, New York, États-Unis de l'Amérique. Le mécanisme de cette presse est arrangé et adapté de façon à ce qu'elle soit mise en mouvement à l'aide d'une courroie se rattachant à un manège, à une machine à vapeur ou à tout autre moteur. La machine est puissante comme construction et elle est munie d'un appareil automatique grâce auquel on peut, à volonté, arrêter et mettre en train instantanement le fonctionnement. L'homme qui alimente la presse à courroie Dederick n'a qu' à jeter avec la fourche le foin dans une grande boite ouverte, où la machine le comprime et le pousse dans le compartiment à presse, de sorte que chaque fourchée est traitée aussi rapidement qu'elle peut être jetée dans la boite. En plus, la presse possède tous les autres avantages et appareils brevetées communs aux presses continues d'autres modéles fabriquées par cette maison. Le rendement de la presse est d'une à quatre tonnes à l'heure, et de dix à vingt tonnes dans un wagon à grain. On la fabrique avec une caisse en acier ou en bois.

Les fabricants ont été les premiers à construire des machines à mettre le foin en balles. L'inventeur, M. P. K. Dederick, a pris des centaines de brevets dans ce pays et dans les pays étrangers. Il a inventé la première presse horizontale à mettre en balles qui ait réussi; elle a révolutionné les méthodes de la mise en balles, et elle a permis aux expéditeurs de charger dans les wagons à grain tout ce qu'ils pouvaient porter en poids. Au lieu de bâtis en bois, les presses Dederick sont fabriquées avec un simple bâtis tubulaire ou carcasse en acier, sans augmentation sensible du prix de construction et elles sont, en pratique, indestructible. On obtient par cette construction plus de force, plus de rigidité, de puissance et de facilité de fonctionnement, et le poids de la machine est réduit d'un quart, tandis que sa durabilité est plus que quadruplée. Les presses Dederick se fabriquent de toutes les dimensions et de tous les genres et, depuis des années, des milliers de ces presses sont en usage dans le monde entier. Les fabricants publient un catalogue illustré faisant voir leurs différentes machines, et ils demandent qu'on leur écrive en vue d'établir des agences.

LAMES DE FAUCHEUSES, FAUCILLES MOISSONNEUSES, PIÈCES DÉTACHÉES, ETC.

La maison Whitman & Barnes Manufacturing Company, organisée en 1877 par la fusion de la maison Whitman & Miles Manufacturing Company, de Fitchburg, Massachusetts, et de la maison George Barnes & Company, de Syracuse, New York, a été reconnue immédiatement par les fabricants de faucheuses, moissonneuses et lieuses comme étant la maison la plus expérimentée et la plus importante du monde pour la fabrication des piècesa appartenant à l'appareil coupeur de ces machines.

Chacun sait, aussi bien le constructeur de la machine que celui qui s'en sert, que la valeur d'une faucheuse, d'une moissoneuse ou d'une lieuse dépend grandement de la qualité de son appareil coupeur, et, bien des années avant cette fusion, les deux compagnies étaient connues pour la qualité supérieure de leurs articles, qui sont devenus le type reconnu de perfection dans le monde entier.

La fusion a réuni l'habileté et l'expérience des deux compagnies, la nouvelle maison gardant à son service tous les ouvriers ayant le plus de valeur et d'expérience, n'employant que des matières de la meilleure qualité et perfectionnant d'année en année ses machines et ses usines, de façon à pouvoir non seulement conserver la précieuse réputation de ses prédécesseurs, mais encore y ajouter, si possible.

Depuis la fusion, la maison Whitman & Barnes Manufacturing Company a ajouté de temps à autre à ses articles d'autres spécialités, notamment des semoirs à torsion, des clefs et clavettes à ressort, des clefs anglaises, des dents de batteuses, des binettes, des faucheuses pour pelouses et des porte-foin.

Elle s'est mise aussi à fabriquer, sur une grande échelle, les articles en caoutchouc; elle a installé dans son usine d'Akron un ensemble très complet et très moderne de machines pour ce genre spécial de fabrication.

Le bureau principal de la maison est situé à Akron, Ohio, U. S. A., avec des usines à Chicago, Illinois, U. S. A., à Akron, Ohio, U. S. A., et à St. Catherines, Ontario, Canada. La maison a aussi des succursales avec magasins à New-York, Syracuse, Cincinnati, Ohio, Chicago, Illinois; Kansas City, Missouri, U. S. A., et à Londres, Angleterre.

Toutes les communications venant de commercants étrangers doivent être adressées à la maison d'exportation, 111 Chambers street, New-York, U. S. A., ou 149 Queen Victoria street, Londres, Angleterre.

Des catalogues donnant des gravures et des descriptions des articles fabriqués par la maison, seront envoyés sur demande.

Le soc de charrue américain, trempé et durci, a fait peut être l'objet de plus d'études que n'importe quel autre instrument aratoire; il n'est guère aujourd'hui de pays, à la surface du globe, où sa haute supériorité ne l'ait fait connaître. Les points de supériorité des socs américains tombent sous le sens, et les importateurs européens d'instruments aratoires de fabrication américaine ne risquent pas de faire fausse route en achetant les charrues américaines à soc trempé dur.

EXPORT IMPLEMENT AGE

PARA CIRCULAR EN EL EXTRANJERO SOLAMENTE.

Periódico Independiente, dedicado exclusivamente al fomento del comercio de exportación en maquinaria para la Agricultura y lecherías, bombas, molinos de viento, aperos de labranza y suministros á cortijos, haciendas, ingenios de hacer azúcar, sitios de labor etc.

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Cuando los países entran en relaciones comerciales y cambian sus productos, adelanta la civilización.

Los fletes de los buques están actualmente á la rata de guerra, así es que los fletes para el carbón, la madera, el hierro, etc, están más altos en la actualidad que los de muchos años atrás.

Le mejor prueba de prosperidad de una nación, es cuando sus ciudadanos tienen relaciones comerciales con el mundo entero. La paz y la buena voluntad entre las naciones son la mejor bendición que puedan recibir.

El hecho de nacer un hombre en tál ó cuál país, es cuestión accidental. Todos los hombres deben amarse porque todos son hermanos, y en lo tocante á comercio deben consultar sus intereses, y comprar y vender en los mercados que mejor los acomoden.

La economía en la mano de obra, no es otra cosa que el uso de máquinas que economizan trabajo. Por más barata que sea la mano de obra no puede en la actualidad competir con las máquinas. De ahí que el agricultor se vé obligado á usar máquinas para evitar la ruina.

España está reconstituyendo sus recursos con rapidez, y como sus activos comerciantes están ahora resueltos á tomar la parte que les corresponde en el incremento comercial, se deben esperar muchos cambios en España, en pocos años. Barcelona es una de las ciudades principales de Europa en materia de empresas, y es centro de un gran comercio.

Un apero por el cual ultimamente se ha preguntado mucho, es la desenterradora de papas. Es un apero que puede ser usado por el agricultor en pequeña escala con gran ventaja. Los aperos para papas se hacen según varios modelos. Los comerciantes del exterior harán bien de tomar nota de algunas mejoras recientes que se le han introducido, y en conferenciar con los fabricantes de cuyos nombres publicamos una lista en cada entrega.

No hace mucho tiempo que los agricultores del exterior no disponían sino de un sólo arado para labrar en todas las especies de suelos, pero el estudio de las exijencias especiales de cada terreno ha sido el resultado de la agricultura progresista, y esto se acentúa todos lo años más y más. Por esta razón, es decir, porque los agricultores del exterior se han acostumbrado á hallar entre las maquinarias norteamericanas, aquellas que llenan las condiciones exijidas por sus heredades, es que han aprendido á consultar al importador de aperos norteamericanes, y es cosa de sorprender, el que se pueda ganar tánto, con sólo adquirir un apero que se adapte exactamente á los requisitos del fruto y de la tierra que úno cultiva.

Uno de los visitantes á la Exposición Universal de París que ha recorrido la Europa con el objeto de saber donde se venden las carretas con mayor ventaja, dice que el está convencido que la carreta ligera á la par que fuerte, que se fabrica en Norte América, es superior á todas, y habrá mucha demanda de ella con preferencia á ninguna otra, por parte de los agricultores europeos más adelantados. Estas carretas crée él, que han tropezado con dificultades mucho mayores que ningún otro apero agrícola de los que han penetrado en Europa, pero los progresos en la demanda que han favorecido este año las carretas norteamericanas, prometen que las ventas de estas habrán de ir en aumento en lo futuro. Los vendedores de carretas europeos que hasta ahora no habían tenido en cuenta este apero norteamericano, encontrarán en adelante en las de nueva fabricación, algunas mejoras que las recomiendan mucho para el comercio de Europa y del Africa del Sur. Los fabricantes de carros norteamericanos, han seguido cuidadosamente los requisitos que se exijen en el extranjero, y están ahora haciendo carretas que sólo necesitan que hacia ellas se llame la atención de las comunidades agrícolas del extranjero, para darle á este ramo un impulso mucho más fuerte que el que hasta la fecha ha tenido.

Los agentes de la Argentina cuya acuciosidad ha producido en los dos últimos meses un notable aumento en los informes que de aquel país se piden, no dejarán de vislumbrar con esto todos los negocios que se les abren para el porvenir, por la paciente propaganda que han venido haciendo en favor de los aperos norteamericanos. Las maquinarias americanas de todas clases son ya populares en aquel país, y todos los meses trae el correo de la Argentina nuevas pedidos de datos. Por ahí se vé que los esfuerzos de los agentes de instrumentos agrícolas dan buen resultado, pues así lo demuestran los guarismos. Y cuenta que apenas se ha empezado, la propaganda. La República Argentina está llamando la atención del mundo hoy día como productora de trigo, y á los aperos de fabricación americana se debe en gran parte este éxito extraordinario. No hay para que decir que los importadores de maquinarias agrícolas americanas en la Argentina, han visto retribuida con creces la fé que han tenido en los aperos de los Estados Undidos. Con sólo apuntar los progresos que se hacen en agricultura, están puestos de manifiesto la perfección y el arte que reunen los aperos norteamericanos, y las grandes economías que con ellos se realizan en la siembra y cosecha de los frutos, fuera de la variedad de climas, suelos y frutos á que ellos se adaptan.

Nuestros corresponsales europeos hablan de las ventajas que encuentran en algunas hacinadoras, segadoras, dalladoras y rastrillos norteamericanos, los cuales son tan superiores que bastrará hacerlos conocer de los agricultores europeos para que se generalice entre éllos su uso. Hace un año que se hicieron ventas en algunas localidades de Francia y de Alemania; estas ventas se hicieron como ventas á prueba, y el resultado ha sido este año verdaderamente remunerador, puesto que se ha manifestado en gran número de pedidos recibidos de los centros donde están establecidos los comerciantes priniciipales de esos paises. Mientras mayor sea la competencia, mejor prueban su superioridad las segadoras norteamericanas.

Los molinos de viento norteamericanos tienen por parte del extranjero una demanda que aumenta constantemente, aunque no en la proporción del aumento que tiene en los Estados Unidos. En muchas comarcas del exterior se usan aún métodos vetustos de labranza, en vez de apelar á los molinos de viento que son un incontestable progreso en cuanto á economía en la mano de obra. Los agentes de este útil apero no se quedan por cierto atrás en llamar la atención hacia sus méritos, pero acaso la fuerza de la rutina sea causa de que se difiera la compra del molino de viento. En algunas comarcas de Europa donde se ha propagado el uso de este apero, retiran los agricultores una utilidad que hasta entonces no habían conocido, y el mismo resultado tendría en otros paises, en cuanto se propagara en ellos el empleo de tan necesario apero. El molino de viento es la fuerza motriz del porvenir para muchas y diversas aplicaciones de las granjas. Se puede decir que es la alegría del pobre y el fiel compañero del rico. Su costo lo pone además al alcance de millares de agricultores que hasta ahora han tenido la ingratitud de no querer aprovechar sus desinteresados servicios.

Los vendedores de aperos norteamericanos en los países extranjeros pueden tener la certeza que la posición que en primera fila ocupan los Estados Unidos en la fabricación de estos artículos y en los métodos perfeccionados de cultivo, permanecerá siempre la misma. No hay país en el mundo en que se dediquen tanto cuidado y tanta atención al estudio de los métodos de cultivo y maquinarias perfeccionadas, como en éste, que se extiende del Atlántico al Pacífico, y al Sur hasta el Golfo de México. Existen escuelas agrícolas en las tres cuartas partes de los Estados. En algunos de ellos hay departamentos de agronomía en que se usan aperos y maquinarias agrícolas de todas clases, enviados por los principales fabricantes, para servir á la instrucción de los estudiantes, donde se ponen á prueba dichas máquinas y se demuestra su utilidad. De esta manera no tan solo queda puesta de manifiesto la utilidad y las ventajas de tal ó cual marca de fábrica, sí que también queda establecida la adaptabilidad de los aperos á las distintas especies de suelos y de condiciones atmosféricas y á las exijencias de los distintos climas. Los fabricantes disfrutan pues de las ventajas de estas pruebas y de ellas resultan no pocas mejoras. Nada se pierde, y un millar de competidores están siempre atisbando dichas pruebas para introducir en sus maquinarias las necesarias mejoras que han de perfeccionar sus inventos.

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Avec chaque expédition, on fournit sans frais aucuns des plans indiquant la façon d'arranger toute la machine dans le chantier, en même temps que des plans pour l'érection de rayons et de fours à sécher, etc., si l'on désire ceux-ci, ce qui permet à n'importe qui d'installer une fabrique de briques avec le moins de frais possible.

Alors que la gravure en question fait voir une machine pour la fabrication des briques par le procédé à terre molle avec faces reconvertes de sable, cette compagnie est prête à fournir les machines à pressez à sec, des cuves à sec ou à eau, et par le fait tout ce qui est nécessaire à un fabricant de briques ; c'est là la devise de la compagnie.

Le dessin inférieur représente un concasseur à pierres et à minerais. Cette machine si utile ne s'emploie non seulement dans les fabriques de briques, mais aussi dans les mines, les carrières et partout où il y a des quartiers de rocs ou des pierres à réduire en morceaux. Elle est construite comme la machine à faire les briques, au point de vue de la solidité et de la durabilité, et pour donner un rendement complet. Le bâti de ce concasseur est fondu d'une seule pièce, n'ayant aucun de ces raccords détachés au boulonnés qui sont si susceptibles de jouer et de mettre les arbres hors d'aplomb, ce qui presque toujours amène une avarie grave et par suite exige une dépense pour les réparations. Puis, les autres pièces du concasseur sont également bien proportionnées et très solides, les volants étant suffisamment larges pour faciliter le fonctionnement de la machine lorsqu'elle accomplit un travail des plus durs.

La compagnie nous informe qu'elle construit ces concasseures en plusieurs dimensions différentes, ainsi que d'autres modèles propres à pulvériser diverses matières; et comme elle publie un catalogue complet des articles qu'elle fabrique, nous engageons nos amis à lui demander des renseignements complets, qui leur seront condialement fournis.

MACHINES À METTRE LE FOIN EN BALLES.

Nous publions à la page 52, un dessin représentant la presse continue à courroie brevetée de Dederick, fabriquée par la maison P. K. Dederick's Sons, à Albany, New York, États-Unis de l'Amérique. Le mécanisme de cette presse est arrangé et adapté de façon à ce qu'elle soit mise en mouvement à l'aide d'une courroie se rattachant à un manège, à une machine à vapeur ou à tout autre moteur. La machine est puissante comme construction et elle est munie d'un appareil automatique grâce auquel on peut, à volonté, arrêter et mettre en train instantanement le fonctionnement. L'homme qui alimente la presse à courroie Dederick n'a qu' à jeter avec la fourche le foin dans une grande boite ouverte, où la machine le comprime et le pousse dans le compartiment à presse, de sorte que chaque fourchée est traitée aussi rapidement qu'elle peut être jetée dans la boite. En plus, la presse possède tous les autres avantages et appareils brevetées communs aux presses continues d'autres modéles fabriquées par cette maison. Le rendement de la presse est d'une à quatre tonnes à l'heure, et de dix à vingt tonnes dans un wagon à grain. On la fabrique avec une caisse en acier ou en bois.

Les fabricants ont été les premiers à construire des machines à mettre le foin en balles. L'inventeur, M. P. K. Dederick, a pris des centaines de brevets dans ce pays et dans les pays étrangers. Il a inventé la première presse horizontale à mettre en balles qui ait réussi ; elle a révolutionné les méthodes de la mise en balles, et elle a permis aux expéditeurs de charger dans les wagons à grain tout ce qu'ils pouvaient porter en poids. Au lieu de bâtis en bois, les presses Dederick sont fabriquées avec un simple bâtis tubulaire ou carcasse en acier, sans augmentation sensible du prix de construction et elles sont, en pratique, indestructible. On obtient par cette construction plus de force, plus de rigidité, de puissance et de facilité de fonctionnement, et le poids de la machine est réduit d'un quart, tandis que sa durabilité est plus que quadruplée. Les presses Dederick se fabriquent de toutes les dimensions et de tous les genres et, depuis des années, des milliers de ces presses sont en usage dans le monde entier. Les fabricants publient un catalogue illustré faisant voir leurs différentes machines, et ils demandent qu'on leur écrive en vue d'établir des agences.

LAMES DE FAUCHEUSES, FAUCILLES MOISSONNEUSES, PIÈCES DÉTACHÉES, ETC.

La maison Whitman & Barnes Manufacturing Company, organisée en 1877 par la fusion de la maison Whitman & Miles Manufacturing Company, de Fitchburg, Massachusetts, et de la maison George Barnes & Company, de Syracuse, New York, a êté reconnue immédiatement par les fabricants de faucheuses, moissonneuses et lieuses comme étant la maison la plus expérimentée et la plus importante du monde pour la fabrication des piècesa appartenant à l'appareil coupeur de ces machines.

Chacun sait, aussi bien le constructeur de la machine que celui qui s'en sert, que la valeur d'une faucheuse, d'une moissoneuse ou d'une liense dépend grandement de la qualité de son appareil coupeur, et, bien des années avant cette fusion, les deux compagnies étaient connues pour la qualité supérieure de leurs articles, qui sont devenus le type reconnu de perfection dans le monde entier.

La fusion a réuni l'habileté et l'expérience des deux compagnies, la nouvelle maison gardant à son service tous les ouvriers ayant le plus de valeur et d'expérience, n'employant que des matières de la meilleure qualité et perfectionnant d'année en année ses machines et ses usines, de façon à pouvoir non seulement conserver la précieuse réputation de ses prédécesseurs, mais encore y ajouter, si possible.

Depuis la fusion, la maison Whitman & Barnes Manufacturing Company a ajouté de temps à autre à ses articles d'autres spécialités, notamment des semoirs à torsion, des clefs et clavettes à ressort, des clefs anglaises, des dents de batteuses, des binettes, des faucheuses pour pelouses et des porte-foin.

Elle s'est mise aussi à fabriquer, sur une grande échelle, les articles en caoutchouc; elle a installé dans son usine d'Akron un ensemble très complet et très moderne de machines pour ce genre spécial de fabrication.

Le bureau principal de la maison est situé à Akron, Ohio, U. S. A., avec des usines à Chicago, Illinois, U. S. A., à Akron, Ohio, U. S. A., et à St. Catherines, Ontario, Canada. La maison a aussi des succursales avec magasins à New-York, Syracuse, Cincinnati, Ohio ; Chicago, Illinois ; Kansas City, Missouri, U. S. A., et à Londres, Angleterre.

Toutes les communications venant de commercants étrangers doivent être adressées à la maison d'exportation, 111 Chambers street, New-York, U. S. A., ou 149 Queen Victoria street, Londres, Angleterre.

Des catalogues donnant des gravures et des descriptions des articles fabriqués par la maison, seront envoyés sur demande.

Le soc de charrue américain, trempé et durci, a fait peut-être l'objet de plus d'études que n'importe quel autre instrument aratoire ; il n'est guère aujourd'hui de pays, à la surface du globe, où sa haute supériorité ne l'ait fait connaître. Les points de supériorité des socs américains tombent sous le sens, et les importateurs européens d'instruments aratoires de fabrication américaine ne risquent pas de faire fausse route en achetant les charrues américaines à soc trempé dur.

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Cuando los países entran en relaciones comerciales y cambian sus productos, adelanta la civilización.

Los fletes de los buques están actualmente á la rata de guerra, así es que los fletes para el carbón, la madera, el hierro, etc , están más altos en la actualidad que los de muchos años atrás.

Le mejor prueba de prosperidad de una nación, es cuando sus ciudadanos tienen relaciones comerciales con el mundo entero. La paz y la buena voluntad entre las naciones son la mejor bendición que puedan recibir.

El hecho de nacer un hombre en tál ó cuál país, es cuestión accidental. Todos los hombres deben amarse porque todos son hermanos, y en lo tocante á comercio deben consultar sus intereses, y comprar y vender en los mercados que mejor los acomoden.

La economía en la mano de obra, no es otra cosa que el uso de máquinas que economizan trabajo. Por más barata que sea la mano de obra no puede en la actualidad competir con las máquinas. De ahí que el agricultor se vé obligado á usar máquinas para evitar la ruina.

España está reconstituyendo sus recursos con rapidez, y como sus activos comerciantes están ahora resueltos á tomar la parte que les corresponde en el incremento comercial, se deben esperar muchos cambios en España, en pocos años. Barcelona es una de las ciudades principales de Europa en materia de empresas, y es centro de un gran comercio.

Un apero por el cual ultimamente se ha preguntado mucho, es la desenterradora de papas. Es un apero que puede ser usado por el agricultor en pequeña escala con gran ventaja. Los aperos para papas se hacen según varios modelos. Los comerciantes del exterior harán bien de tomar nota de algunas mejoras recientes que se le han introducido, y en conferenciar con los fabricantes de cuyos nombres publicamos una lista en cada entrega.

No hace mucho tiempo que los agricultores del exterior no disponían sino de un sólo arado para labrar en todas las especies de suelos, pero el estudio de las exijencias especiales de cada terreno ha sido el resultado de la agricultura progresista, y esto se acentúa todos lo años más y más. Por esta razón, es decir, porque los agricultores del exterior se han acostumbrado á hallar entre las maquinarias norteamericanas, aquellas que llenan las condiciones exijidas por sus heredades, es que han aprendido á consultar al importador de aperos norteamericanes, y es cosa de sorprender, el que se pueda ganar tánto, con sólo adquirir un apero que se adapte exactamente á los requisitos del fruto y de la tierra que úno cultiva.

Uno de los visitantes á la Exposición Universal de París que ha recorrido la Europa con el objeto de saber donde se venden las carretas con mayor ventaja, dice que el está convencido que la carreta ligera á la par que fuerte, que se fabrica en Norte América, es superior á todas, y habrá mucha demanda de ella con preferencia á ninguna otra, por parte de los agricultores europeos más adelantados. Estas carretas crée él, que han tropezado con dificultades mucho mayores que ningún otro apero agrícola de los que han penetrado en Europa, pero los progresos en la demanda que han favorecido este año las carretas norteamericanas, prometen que las ventas de estas habrán de ir en aumento en lo futuro. Los vendedores de carretas europeos que hasta ahora no habían tenido en cuenta este apero norteamericano, encontrarán en adelante en las de nueva fabricación, algunas mejoras que las recomiendan mucho para el comercio de Europa y del Africa del Sur. Los fabricantes de carros norteamericanos, han seguido cuidadosamente los requisitos que se exijen en el extranjero, y están ahora haciendo carretas que sólo necesitan que hacia ellas se llame la atención de las comunidades agrícolas del extranjero, para darle á este ramo un impulso mucho más fuerte que el que hasta la fecha ha tenido.

Los agentes de la Argentina cuya acuciosidad ha producido en los dos últimos meses un notable aumento en los informes que de aquel país se piden, no dejarán de vislumbrar con esto todos los negocios que se les abren para el porvenir, por la paciente propaganda que han venido haciendo en favor de los aperos norteamericanos. Las maquinarias americanas de todas clases son ya populares en aquel país, y todos los meses trae el correo de la Argentina nuevas pedidos de datos. Por ahí se vé que los esfuerzos de los agentes de instrumentos agrìcolas dan buen resultado, pues así lo demuestran los guarismos. Y cuenta que apenas se ha empezado, la propaganda. La República Argentina está llamando la atención del mundo hoy día como productora de trigo, y á los aperos de fabricación americana se debe en gran parte este éxito extraordinario. No hay para que decir que los importadores de maquinarias agrícolas americanas en la Argentina, han visto retribuida con creces la fé que han tenido en los aperos de los Estados Undidos. Con sólo apuntar los progresos que se hacen en agricultura, están puestos de manifiesto la perfección y el arte que reunen los aperos norteamericanos, y las grandes economías que con ellos se realizan en la siembra y cosecha de los frutos, fuera de la variedad de climas, suelos y frutos á que ellos se adaptan.

Nuestros corresponsales europeos hablan de las ventajas que encuentran en algunas hacinadoras, segadoras, dalladoras y rastrillos norteamericanos, los cuales son tan superiores que bastrará hacerlos conocer de los agricultores europeos para que se generalice entre éllos su uso. Hace un año que se hicieron ventas en algunas localidades de Francia y de Alemania : estas ventas se hicieron como ventas á prueba, y el resultado ha sido este año verdaderamente remunerador, puesto que se ha manifestado en gran número de pedidos recibidos de los centros donde están establecidos los comerciantes prinicipales de esos países Mientras mayor sea la competencia, mejor prueban su superioridad las segadoras norteamericanas.

Los molinos de viento norteamericanos tienen por parte del extranjero una demanda que aumenta constantemente, aunque no en la proporción del aumento que tiene en los Estados Unidos. En muchas comarcas del exterior se usan aún métodos vetustos de labranza, en vez de apelar á los molinos de viento que son un incontestable progreso en cuanto á economía en la mano de obra. Los agentes de este útil apero no se quedan por cierto atrás en llamar la atención hacia sus méritos, pero acaso la fuerza de la rutina sea causa de que se difiera la compra del molino de viento. En algunas comarcas de Europa donde se ha propagado el uso de este apero, retiran los agricultores una utilidad que hasta entonces no habían conocido, y el mismo resultado tendría en otros países, en cuanto se propagara en ellos el empleo de tan necesario apero. El molino de viento es la fuerza motriz del porvenir para muchas y diversas aplicaciones de las granjas. Se puede decir que es la alegría del pobre y el fiel compañero del rico. Su costo lo pone además al alcance de millares de agricultores que hasta ahora han tenido la ingratitud de no querer aprovechar sus desinteresados servicios.

Los vendedores de aperos norteamericanos en los países extranjeros pueden tener la certeza que la posición que en primera fila ocupan los Estados Unidos en la fabricación de estos artículos y en los métodos perfeccionados de cultivo, permanecerá siempre la misma. No hay país en el mundo en que se dediquen tanto cuidado y tanta atención al estudio de los métodos de cultivo y maquinarias perfeccionadas, como en éste, que se extiende del Atlántico al Pacífico, y al Sur hasta el Golfo de México. Existen escuelas agrícolas en las tres cuartas partes de los Estados. En algunos de ellos hay departamentos de agronomía en que se usan aperos y maquinarias agrícolas de todas clases, enviados por los principales fabricantes, para servir á la instrucción de los estudiantes, donde se ponen á prueba dichas máquinas y se demuestra su utilidad. De esta manera no tan solo queda puesta de manifiesto la utilidad y las ventajas de tal ó cual marca de fábrica, sí que también queda establecida la adaptabilidad de los aperos á las distintas especies de suelos y de condiciones atmosféricas y á las exijencias de los distintos climas. Los fabricantes disfrutan pues de las ventajas de estas pruebas y de ellas resultan no pocas mejoras. Nada se pierde, y un millar de competidores están siempre atisbando dichas pruebas para introducir en sus maquinarias las necesarias mejoras que han de perfeccionar sus inventos.

INTENTIONAL SECOND EXPOSURE

ACERO DE "CENTRO BLANDO."

Por qué son los Arados Norteamericanos, superiores a todos los demas—El Material que va dentro de los Arados.

El "acero de centro blando" que se emplea en las vertederas de los arados norteamericanos de primera clase, es uno de los más notables resultados del genio inventivo del norteamericano. El valor de este invento es incalculable para el agricultor. Es la forma de acero más duradera para una vertedera, y es el único material que se friega ó se limpia á sí mismo, en terrenos ligeramente gredosos, tales como los de las llanuras norteamericanas.

La vertedera de acero de "centro blando," es una plancha compuesta de tres hojas de acero que están unidas y arrolladas dando el espesor deseado. La hoja del medio ú hoja del centro, es de acèro suave sin templar, al paso que las hojas de alante y de atrás, son del más fino acero fundido, ó sea el acero para herramientas que recibe el más fuerte temple. Las ventajas de esta vertedera compuesta, se comprenden mejor cuando se examina el desarrollo de los arados de acero en Norte América.

Cuando las llanuras de Illinois y otros Estados del Occidente de los Estados Unidos fueron surcadas por el arado de los primeros colones, el silvestre terruño fué entreabierto, y sucedió que los arados con vertederas de madera ó de hierro colado que habían traído consigo desde el Este, no servían para el caso. El ligero y rico suelo se adhería á la vertedera y fué imposible arar, pero se dieron cuenta que, cuando la vertedera era de un acero de fuerte temple, así como el de las herramientas, ella sola se limpiaba, aún en el más pegajoso suelo. Empezóse, ántes de 1840, á hacer arados de madera con puntas de acero cuya la vertedera estaba cubierta con planchas de acero improvisadas, que provenían de serruchos viejas. Pocos años después, los fabricantes de arados consiguieron planchas de acero de las que sirven para hacer serruchos, con del ancho necesario para hacer vertederas, y también se importó acero de Inglaterra y de Alemania. En 1847, se arrolló en Norte América el primer arado de acero de un espesor que hacía innecesario el respaldo de madera. Empero, pronto se notó que este acero no siempre se limpiaba á menos que se le diera un temple tan duro que la vertedera resultaba demasiado frágil para ser usada en la granja.

En 1868, Mr. John Lane, inventor de Chicago, sacó una patente para una forma de vertedera, cuyo uso bien presto se generalizó, y es, con algunas mejoras más, la de acero de centro blando que se usa á la fecha. La idea de este inventor era robustecer una plancha del más duro acero de crisol templado con un respaldo de hierro blando; pero como no se podían el hierro y el acero estirar y encoger al mismo tiempo al calentarse ó enfriarse, fué necesario hacer una vertedera de tres hojas para que las hojas de acero de alante y de atrás se encogieran ó se estiraran juntas, guardando decirlo así, el equilibrio. La plancha compuesta, pudo entonces ser calentada y trabajada á martillo hasta darle la curva necesaria y para poderla templar sin que se torciera.

Este procedimiento para hacer acero para arados fué inmediatamente adoptado por los molinos de acero de Pittsburg y está actualmente en uso con algunas modificaciones. Úsase ahora acero dulce para la hoja central en vez de hierro forjado, y se han realizado muchas mejoras en el procedimiento de soldar y de arrollar. Por medio del ingenioso uso de rollos excéntricos, se arrolla un arado de manera que la orilla de adelante ú orilla cortadora está robustecida, produciendo lo que se llama entre labradores la doble barba.

El acero de "centro blando" es un producto de difícil elaboración, puesto que necesita un cuidado esmeradísimo para que la unión de las hojas sea perfecta, pero una vez concluido, es notable por su uniformidad y su fino temple. Este acero que sólo se fabrica en los Estados Unidos, suministra á los arados norteamericanos de acero, la superioridad que tanta fama les ha dado, así en duración, como en fuerza, sin peso innecesaria y con perfecta limpieza.

MÉTODOS NORTEAMERICANOS.

El "Export Implement Age" hace tiempo que viene reconociendo la necesidad de una más extensa difusión de los conocimientos agrícolas entre los agricultores del mundo. Los progresos de la agricultura en la América del Norte han sido ayudados y favorecidos por la prensa agrícola, la cual por sus enseñanzas y sus discusiones de sistemas ha difundido los conocimientos agrícolas entre los agricultores de este país. Los fabricantes de aperos y maquinarias de todas clases han ganado en conocimientos, eficacia, y destreza con sólo reunirse con frecuencia para comparar sus experimentos, y manifestarse mutuamente los conocimientos que la experiencia les ha enseñado. Este liberal método es especial á los Estados Unidos y está probado que constituye una palanca gigantesca para elevar á la meta la habilidad de los fabricantes. No es que crean los agricultores de este país que ellos tienen más conocimientos en agricultura que los de otros países, pero tienen experienca, y han puesto en práctica sistemas y alcanzado resultados, cuyo conocimiento no puede dañar á los agricultores de ningún país, antes bien acaso les serían útiles. Si pues los vendedores y comerciantes en aperos norteamericanos en el extranjero estuvieran familiarizados con los métodos agrícolas de este país, desde la siembra hasta la cosecha, acaso podría ese conocimiento serles de gran ayuda para la venta de los aperos, especialmente cuando les fuera dado poder hacer la demostración de las ventajas de tal ó cual marca sobre tal ó cual otra, así en el trabajo como en la producción. A veces se imaginan algunos agricultores que todo lo saben, pero los hay también que están dispuestos á prestar atención y tomar datos. Esa es la coyuntura que ha de aprovechar todo vendedoró comerciante en aperos para transformarse en corredor, con muy buenos éxitos, y no sólo corredor sino también instructor en el arte y cincia de la agricultura. De hecho, esta clase de servicio se hace día por día más necesario puesto que la agricultura abarca constantemente nuevas regiones y abre nuevos territorios al progreso agrícola, por medio de los ferrocarriles. Tanto los agentes, como los importadores y los corredores deben usar de los medios que tienen á su disposición para aumentar sus ventas, siguiendo los pasos al progreso; y el sistema de enseñar al agricultor el mejor modo de cultivar su heredad, es, sin duda, la mejor propaganda.

UNAS CUANTAS PALABRAS Á LOS VENDEDORES Y AGENTES DEL EXTRANJERO.

La construcción de ferrocarriles en los países extranjeros habrá de ser el más poderoso factor que determine la extensión de la agricultura hasta un extremo que parecerá increible en este país y en el extranjero. Sólo data de tres años el grande y sistemático impulso que se le está dando al ramo de ferrocarriles en el extranjero. Todos los meses hay nuevas empresas en México, Centro América, Sur América, Africa, el Sur de Asia y la Oceanía. Esta circunstancia ha de llamar la atención de los comerciantes en aperos agrícolas del extranjero. Esta éra de construcción de ferrocarriles hasta en los países más pequeños de la tierra, significa que se están transformando y saliendo de sus malas condiciones para entrar de lleno en el progreso. Esto significa que habrán de usarse de diez á cincuenta aperos donde en la actualidad apenas existe uno. Significa también extensas comarcas sometidas al cultivo metódico y científico en vez de las selvas, desiertos y pantanos que ántes existían. Y este cambio se efectuará mucho más pronto que lo que puedan indicar las apariencias. Basta tomar nota de las exportaciones de rieles, locomotoras, wagones y material de ferrocarril á casi todos los países del mundo para darse úno cuenta de los progresos que se están realizando. Sería casi imposible hacer una somera enumeración de todas las empresas ferrocarrileras que están en construcción actualmente. Los dueños de fábricas de rieles norteamericanos, reciben en la actualidad grandes pedidos de todas partes. Prescindiendo pues de la cantidad de empresas constructoras de ferrocarriles que están en actividad, y considerando tan sólo lo que esto significo, nos parece cosa perfectamente demostrada que es el resultado de la actividad agrícola en que han entrado todos esos países, para sacar del suelo los productos naturales que son la fuente de toda prosperidad, y asimismo significa que por medio de la inmigración se están poblando países ántes desiertos, siguiendo la ley natural que induce á los individuos á trasladarse de los centros pletóricos á lugares poco habitados donde es más fácil la vida. En resumen la construcción de ferrocarriles en los países más atrasados, no es otra cosa que el despertar de esas comarcas y su entrada en la via del progreso agrícola sistemático, es decir, que ellos son mercados permanentes para las maquinarias y aperos agrícolas, pasando esos pueblos de la prodigalidad á la economía bien entendida, y de la inercie á la industria, y sus comarcas, del estado selvático á la actividad industrial y agrícola. Como se dijo ántes, los que tienen la honra de ser agentes ó introductores de los productos de las fábricas y talleres, son los llamados á cooperar esplendidamente en esta propaganda de civilización y progreso.

Sin duda que son progresistas los fabricantes de Inglaterra, Francia, Alemania, Austria, Hungría y otros países; este es un hecho innegable, y que todos los norteamericanos reconocen. Pero éstos creen que tienen además sobre los primeros, la ventaja de tener á la mano grandes acopios de materia prima de primer orden y obreros finísimos y los más diestros del mundo.

La cosecha de maíz en los Estados Unidos, alcanza á más ó menos 1,500,000,000 de bushels (ó sean 750,000 quintales) por año. Esta enorme producción, se consume en su mayor parte para alimento del ganado, bien que se usa en la mesa de los agricultores también.

Si los agentes y vendedores de aperos norteamericanos en el extranjero, se ocupan con acuciosidad en la propaganda de los aperos norteamericanos en sus respectivos países, bien presto serán ayudados por empresas norteamericanas que establecerán almacenes para exhibir las manufacturas de los Estados Unidos. Estos almacenes, donde quiera que han sido establecidos, han contribuido mucho al desarrollo del comercio y han ayudado en su propaganda á los vendedores de aperos. Los norteamericanos tienen ya una empresa que se ocupa de este objeto, tal es la Associación National de Manufactureros; ayúdese á esta empresa, y pronto se establecerán los referidos almacenes.

Una razón fundamental para que se reconozca el mérito de los aperos norteamericanos, que gozan de tanta fama en el mundo entero, es que la mayor parte ha sido fabricado por piezas, y por medio de maquinarias cuyo trabajo es infalible, las cuales, ora elaboren una sola pieza, ora las elaboren por millares, las hacen todas perfectamente uniformes; con este método, no pueden ocurrir ni descuidos, ni imperfecciones de ningún genero. La mano del hombre, por contra puede resbalar ó cansarse, y dejar que se mezcle á la obra un elemento de flaqueza; al paso que la máquina no varía, ni piensa, ni flaquea jamás, y por eso es que los aperos americanos son lo que son. Cada pieza es examinada y probada, y luego que todas están reunidas, representan el mejor material, la mayor habilidad y la más perfecta adapatación. Este sistema de fabricación excluye los defectos y flaquezas, y estimula además la habilidad humana, pues que sólo llama la atención hacia una sola cosa. De ahí que las maquinarias de fabricar cada pieza, son muy superíores y dan por resultado que, al presentarse en venta en el almacén del comerciante uno de estos aperos, nada se le puede comparar por sus excelentes condiciones.

Un punto que debe llamar la atención de los vendedores de aperos sudamericanos y australianos, es la tendencia á subir que tiene el hierro. Una gran alza industrial se espera actualmente en los Estados Unidos. Las empresas agrícolas y manufactureras estan tomando creces. La madera de construcción se vende á más alto precio. Los compradores y comerciantes en aperos empiezan comprar y encargar para el porvenir. En previsión del alza, harán bien los interesados en conferenciar lo más pronto posible con los fabricantes. Con frecuencia sucede que un fabricante reciba pedidos para lo futuro á los precios actuales, con tal de asegurar esa transacción, aunque tenga la seguridad que los precios habrán de aumentar. Por eso debíeran los vendedores del extranjero aprovechar esa particularidad de la naturaleza humana. Las condiciones de fuerte vida que tiene la industria en los países adelantados, aseguran que resistirán el alza, bien que la tendencia á subir que tienen los actuales precios, sera acaso considerable. Es pues muy oportuno el momento para todos los interesados, para ponerse al habla con los fabricantes norteamericanos por sí mismos, tratando directamente con ellos, para proveerse en tiempo de un surtido para el año de 1901.

Nadie mejor que el comerciante extranjero sabe lo que son las dificultades que hay que vencer para propagar el uso de los manufacturas norteamericanas en el extranjero. A despecho de estas dificultades, se han realizado maravillosos progresos. Las asociaciones comerciales, así como las manufactureras que están interesadas en el comercio de exportación, están considerando planes que tienen por objeto vencer los obstáculos que se oponen á los progresos del comercio; entre estos proyectos están los bancos más directos y mejorados; más facilidades para los fletes, y también la modificación de los conocimientos de embarque, para que estén más cónsonos con los intereses del comercio, etc. Los Estados Unidos, hace más de un siglo que han tenido harto en que ocuparse con su propio desarrollo, y sólo hace un cuarto de siglo que han dirijido preferentemente su atención hacia el comercio con el mundo. Otras naciones han estado siempre esforzándose por conseguir el comercio del mundo, y no es por lo tanto extraño que los Estados Unidos descubran también que ellos pueden atender á las necesidades de todas las naciones. Los que están familiarizados con el carácter norteamericano, pueden tener la seguridad que ellos no esperarán mucho para que queden libres todos los caminos comerciales. Buques, bancos, paquetes postales, tratados de comercio, almacenes, agencias, periódicos, todo se realizará y vendrá á contribuir en la obra de colocar á los Estados Unidos en un pié de igualdad con las demás naciones del mundo en la emulación de ocupar su puesto el comercio de exportación.

La palabra que conviene para caracterizar la agricultura tal como se practica en Norte América, es *extensiva*, en vez de la palabra *intensiva* que conviene para caracterizar la agricultura europea. El cultivo de la mayor extensión de terreno, es la meta norteamericana, mientras que en Europa es el cultivo de la mejor tierra lo que prevalence. La agricultura extensiva es la que ha originado la construcción de máquinas que puedan producir la mayor suma de trabajo con el menor costo. La idea intensiva, cuando prevalece en otros países, naturalmente apela más bien al empleo de braceros y vé con menos interés la cooperación mecánica. Así es que tales métodos hicieron muy difícil al principio la introducción en Europa de los aperos norteamericanos; pero al hacerse necesaria la ayuda de la mecánica, se empezaron gradualmente á adoptar maquinarias. Esta adopción hubo de hacerse muy despacio por la circunstancia de ser de poca extensión el area que poseía cada propietartio, y que éste se había acostumbrado hacía muchos años á cultivar su heredad sin maquinarias y procurando sólo sacarle para sus propias necesidades.

Pero desde que se ha desarrollado la agricultura, intervinieron nuevos factores; los estrechos límites en que estaba encerrado en los países europeos, se han extendido, abriéndose nuevos mercados al uso de las maquinarias. Estos factores son los ferrocarriles, con cuya ayuda se extiende el comercio á las regiones más remotas, y también el aumento en la demanda por parte del mayor número de individuos ocupados en trabajos industriales.

Hay en los Estados Unidos signos que revelan en algunas localidades el próximo advenimiento de los métodos de agricultura intensiva, y como es natural, requerirá este nuevo sistema modificaciones en los aparatos agrícolas para abastecer la nueva demanda. De esta manera, las tendencias agrícolas son las mismas en Europa y en los Estados Unidos, bien que en nada puedan dañarse.

La enseñanza que de ahi se desprende, es que el tomar creces el prurito de la competencia, hallarán los europeos en los aperos norteamericanos, los aparatos necesarios para ayudarlos á salir avante. Y ¿por qué no se podrán haller estos aparatos en Inglaterra, donde las condiciones de cultivo son más ó menos las mismas que en el continente? Porque la cultura extensiva no existe en Inglaterra, al paso que es la actual condición en Norte América, siendo aquí tánta la abundancia de tierra, que hay estímulo en crear aparatos para utilizarla y sacarle todo el provecho, á la más pequeña heredad, obligando á proceder así, la siempre creciente competencia, de que carece Inglaterra, por estar allí restringida la tierra.

Es pues logicamente cierto que el mundo debe venir á buscar á los Estados Unidos, en lo sucesivo, aquellas mejoras en los aperos y maquinarias que demande la agricultura científica, como ayuda, porque es por la agricultura científica que se habrán de realizar los progresos agrícolas en lo sucesivo.

La Exposición de París ha inducido y estimulado á los fabricantes norteamericanos á amoldar sus aperos á las condiciones especiales que existen en el extranjero. Hace tiempo que ellos han reconocido que era preciso hacer ciertas adaptaciones en los aperos agrícolas, y ha sido el propósito del fabricante norteamericano averiguar en qué consistían estas adaptaciones. Estos datos no siempre era fácil lograrlos. Los hechos empero, poco á poco abrieron los ojos de los fabricantes de este país, así es que los aperos de reciente fabricación, han sido bien acogidos por casi todos los países extranjeros. Hay países, tales como México, donde no es fácil esta adaptación, en especial en arados, por la calidad pegajosa de gran parte del suelo, donde además no se necesita labranza profunda. Además el extenso uso del riego no exije el mismo temple ó la misma especie de arado; para todo esto, se está procurando encontrar remedio; tan luego como se conozcan las necesidades especiales de la agricultura de cada país, ne se tardará en hacer una adaptación. Esto concierne los intereses de toda la agricultura. En el arreglo de los tallerés de máquinas, los europeos se avienen muy bien con la adopción de los sistemas norteamericanos. Pero la vida de la quinta y sus necesidades son cosas distintas, y las viejas rutinas son tenaces. A pesar de todo, se han realizado progresos. Los fabricantes norteamericanos tienen otros medios de saber lo que necesita cada país, y por medio de sus agentes en el extranjero están realizando grandes progresos. El problema es vasto y complicado, porque se trata de nada menos que de cambiar las rutinas seculares, tan tenazmente arraigadas, como las rocas que forman los cerros que circundan sus horizontes. Los agentes é importadores de fuéra, no tardan en advertir que la lucha es doble, y que no basta presentar aperos á precios bajos, sí que también es preciso empezar por educar; es decir, que no basta brindar, algo mejor que lo que se ha venido usando, el agente agrícola del siglo veinte, tiene que ser educacionista, su obra es más bien demonstrativa. La persuación alcanza muy lejos, aún cuando no dé resultados inmediatos.

Las máquinas MARTIN, para hacer ladrillos.

Publicamos con referencia á este artículo los grabados de dos máquinas que han tenido una gran demanda así en este país como en el extranjero. El cliché de más arriba es un facsimile de la última máquina perfeccionada para hacer ladrillos para edificios, inventada por la casa Henry Martin Brick Machine Manufacturing Co., Lancaster, Pa. Esta Compañía se ocupa activamente, por medio de su Presidente Don Henry Martin, en la fabricación de ladrillos y en la construcción de máquinas de hacer ladrillos, desde hace cerca de cincuenta años, y el resultado es que, en el día de hoy, puede presentar al mundo una máquina que no tiene igual en sencillez, duración y producción de material.

La ilustración que acompañamos, representa una de nuestras máquinas estillo "B," que ha sido extensamente adoptada en todos los Estados Unidos y en el Canadá, puesto que hay como 3,000 trabajando en la actualidad; y donde quiera que han sido introducidas han dado por resultado más pedidos. Como lo apuntamos más arriba, son estas máquinas sumamente sencillas en su construcción, lo cual las recomienda especialmente al fabricante de ladrillos. No requieren ni destreza, ni siquiera operarios inteligentes para manejarlas, y pueden producir cualquier cantidad de ladrillos y tejas, etc., de distintos tamaños.

Cada máquina está construida por obreros experimentados, y cada faz de la construcción está especialmente vigilada por el superintendente general de la Compañía, Don William R. Martin: cada máquina va acompañada por una garantía.

Toda máquina expedida desde las fábricas de la Compañía Martin, es armada y cuidadosamente probada antes de ser embalada, y cada pieza cuidadosamente marcada, por manera que cualquier maquinista las puede volver á armar por los grabados é instrucciones que las acompañan.

Con cada expedición van adjuntos planes gratis, para demostrar el arreglo de toda la maquinaria en el patio así como los planes que indican la disposición de los aparatos para secar, los hornos, etc. (si se desean éstos últimos), y que facilitan á cada cual la construcción de una fábrica de ladrillos á un costo muy barato.

La ilustración que publicamos representa una máquina para la fabricación de ladrillos por medio del procedimiento de barro blando con superficie de arena; pero esta Compañía también está en aptitud de poder suministrar las más perfeccionádas máquinas de secar y prensar, moldes para material seco ó húmedo, y en resumen, todo lo que un fabricante de ladrillos pueda necesitar, pues tal es el lema de esta Compañía.

El grabado inferior que acompañamos aquí, representa una moledora de roca y de quijo. Esta cómoda maquinaria no está sólo destinada á ser usada en un patio de hacer ladrillos, sino que se la puede utilizar también en canteras y donde quiera que se requiera pulverizar rocas ó piedras muy duras. Está construida lo mismo que la máquina de hacer ladrillos, para trabajos fuertes y en buenas condiciones de duración y para hacer operaciones que puedan durar un día entero. La armazón de esta moledora es vaciada en una sola pieza, suprimiendo todas las juntas ya sueltas, ya apredadas por medio de tuercas, que tan facilmente se aflojan, y que con tanta frecuencia sacan á las espigas de su lecho constituyendo casi siempre una seria descomposición, y por consiguiente ocasionando reparaciones y gastos. Además todas las otras piezas de la moledora están bien proporcionadas y son muy pesadas, siendo el volante suficientemente amplio para hacer mover la máquina aún cuando esté haciendo el trabajo más fuerte.

Nos informa la Compañía que ella fabrica esta máquina en varios tamaños, adaptados para pulverizar distintos materiales, y como ella publica un catálogo completo de las máquinas y aparatos que fabrica, aconsejamos á nuestros amigos que pidan todos los datos que necesiten, porque les serán suministrados con el mayor gusto.

CUCHILLAS PARA DALLADORAS, HOCES PARA SEGADORAS, PIEZAS, ETC.

La casa Whitman & Barnes Manufacturing Company, organizada en 1877, por la reunión de la casas Whitman & Miles Manufacturing Company, de Fitchburg, Mass., y George Barnes & Co, de Syracuse, N. Y., fué reconocida inmediatamente por los fabricantes de dalladoras, segadoras y hacinadoras como la casa más importante del mundo y la de más experiencia en la fabricación de piezas accesorias pertenecientes á los aparatos cortantes de esas maquinas.

Todos los fabricantes de dalladoras, de segadoras y de hacinadoras, así como los que emplean estos aparatos, saben muy bien que el valor de ellos, depende en gran parte de la calidad de sus cuchillas, así, es que muchos años antes de su reunión eran ambas Companías reconocidas por la excelente calidad de sus artículos, como las primeras del mundo entero.

La reunión de ambas fábricas junta la habilidad con la experiencia que ántes tenían, conservando ambas sus mejores operarios, no usando sino la mejor clase de material, y perfeccionando todos los años su maquinaria y sus edificios; proponiéndose, no sólo conservar la bien merecida reputación que tenían cuando estaban separadas, sino además agregarle si fuere posible.

Desde su reunión, ha agregado de vez en cuando la nueva Compañía Whitman & Barnes, algunos artículos más, á los de su fabricación, especialmente sembradoras retorcidas, muelles de resorte, y chabetas, llaves inglesas, dientes para trilladoras, cultivadoras, segadoras, dalladoras de césped y llevadoras de heno.

También se ocupa activamente esta Compañia en la fabricación de artículos de goma, y ha instalado, en sus edificios de Akron, completos y modernos aparatos y maquinarias para esta especial fabricación.

Su oficina general está en Akron, Ohio, E. U. de N. A.; col almacenes en Chicago, Illinois, E. U. de N. A.; en Akron, Ohio, E. U. de N. A., y St. Catherines, Ontario, Canadá. También tiene sucursales con oficinas, en Nueva York; Syracuse, New York; Cincinnati, Ohio; Chicago, Illinois; Kansas City, Missouri, y en Londres, Inglaterra.

Todas las comunicaciones del exterior, deberán ser dirijidas á la oficina de exportaciones, 111 Chambers Street, Nueva York, E. U. de N. A.; ó á 149 Queen Victoria Street, Londres, Inglaterra.

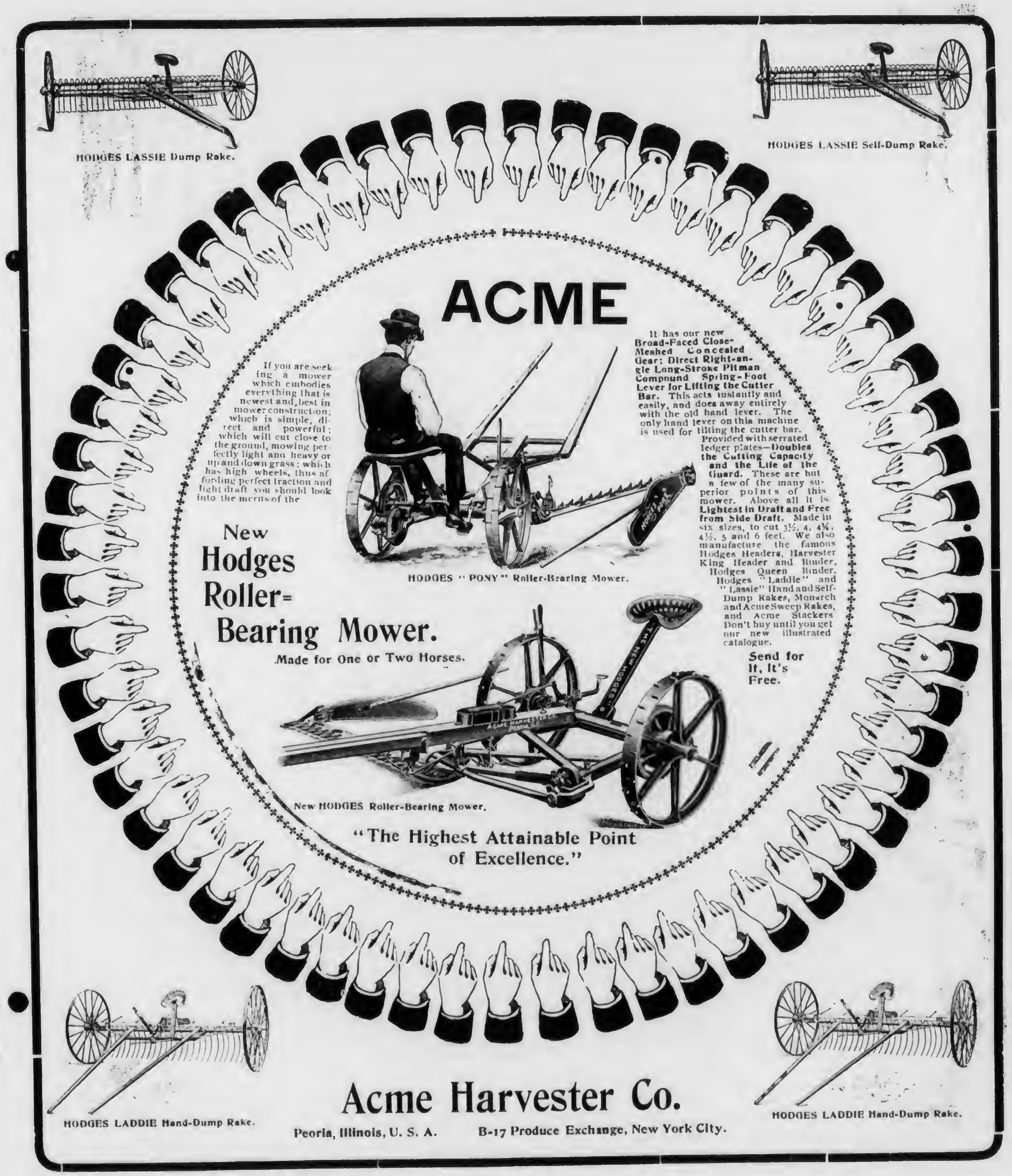
Se enviarán los catálogos ilustrados que contienen la descripción de sus manufacturas, á las personas que los pidan.

MAQUINARIAS EMPACADORAS DE HENO.

En la página 52, insertamos un grabado que representa la prensa de correa de transmisión continua patentada por Dederick; este apero es fabricado por P. K. Dederick's Sons, de Albany, N. Y., Estados Unidos de América. La prensa tiene un engranaje que se adapta para ser puesto en moción por una correa de transmisión, suministrando la fuerza motriz, ora una asémila, ora un motor cualquiera. Dicha máquina es de gran potencia en su construcción, y tiene además un aparato automático cuyo objeto es detenerla inmediatamente ó ponerla en movimiento instantáneamente, á la voluntad del operario. El obrero encargado de abastecer la prensa Dederick, no tiene otra cosa que hacer, sino introducir el heno en un gran cajón abierto, donde la máquina lo condensa y lo prensa dentro de la caja prensadora, desapareciendo cada horquetada tan rapidamente como es introducida. Además tiene la máquina todas las ventajas y mejoras patentadas que son comunes á las prensas de trabajo continuo de otros estilos, que fabrica también esta Compañía. Su capacidad de trabajo es de una á cuatro toneladas por hora, y pueda cargar de diez á veinte toneladas en un sólo carretón. Se hacen estas máquinas con cajón de acero ó de madera.

Estos fabricantes han sido verdaderos pioneros en la construcción de maquinarias para enfardelar heno. El inventor Mr. P. K. Dederick, ha patentado sus inventos por centenares en éste y en otros países. El fué el inventor de la primera afamada prenas de enfardelar horizontal, que causó una revolución en los métodos de enfardelar, y perimitió á los expeditores, que cargarán carretones hasta el maximum de su peso. En vez de armazón de madera, tienen las prensas Dederick un simple tubo de acero y conchas de acero, para no aumentar inutilmente el material disminuyendo el costo de la construcción; estas armazones son practicamente indestructibles. Por estos medios, se obtiene fuerza, rigidez, energía y facilidad de operación, al paso que el peso de la máquina disminuye en una cuarta parte, y que la duración es aumentada en más de cuatro tantos. Las prensas Dederick se fabrican en todos tamaños y estilos, y hace muchos años que están en uso varios millares de ellas en el mundo entero. Los fabricantes publican un catálogo ilustrado, con la muestra de sus principales máquinas, y desean entrar en correspondencia con personas aptas para establecer agencias.

Los que introducen en el extranjero los productos de los talleres y fábricas norteamericanos, saben muy bien que es preciso evadir los inconcientes humos de superioridad: la vanidad es inherente á la naturaleza humana, y se la debe tener en cuenta y no herirla. Por otra parte, la rutina es un tirano que debe ser combatido con delicadeza. La inclinación del hombre, es en general, no labrar más terreno que el que necesita. El espíritu activo del norteamericano, se está sin embargo extendiendo á todos los países, y no dejará de tener influencia sobre los pueblos. Pero se debe tener mucho cuidado en no maltratar las viejas rutinas, y no contrariar los vetustos métodos, sino con suma dulzura. La sola experiencia les enseñara además cuáles son los mejores métodos.



HODGES LASSIE Dump Rake.

HODGES LASSIE Self-Dump Rake.

ACME

If you are seeking a mower which embodies everything that is newest and best in mower construction; which is simple, direct and powerful; which will cut close to the ground, mowing perfectly light and heavy or up and down grass; which has high wheels, thus affording perfect traction and light draft you should look into the merits of the

New Hodges Roller-Bearing Mower.

Made for One or Two Horses.

HODGES "PONY" Roller-Bearing Mower.

It has our new **Broad-Faced Close-Meshed Concealed Gear; Direct Right-angle Long-Stroke Pitman Compound Spring-Foot Lever for Lifting the Cutter Bar.** This acts instantly and easily, and does away entirely with the old hand lever. The only hand lever on this machine is used for lifting the cutter bar. Provided with serrated ledger plates—**Doubles the Cutting Capacity and the Life of the Guard.** These are but a few of the many superior points of this mower. Above all it is **Lightest in Draft and Free from Side Draft.** Made in six sizes, to cut 3½, 4, 4¼, 4½, 5 and 6 feet. We also manufacture the famous Hodges Headers, Harvester King Header and Binder, Hodges Queen Binder, Hodges "Laddie" and "Lassie" Hand and Self-Dump Rakes, Monarch and Acme Sweep Rakes, and Acme Stackers. Don't buy until you get our new illustrated catalogue.

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New HODGES Roller-Bearing Mower.

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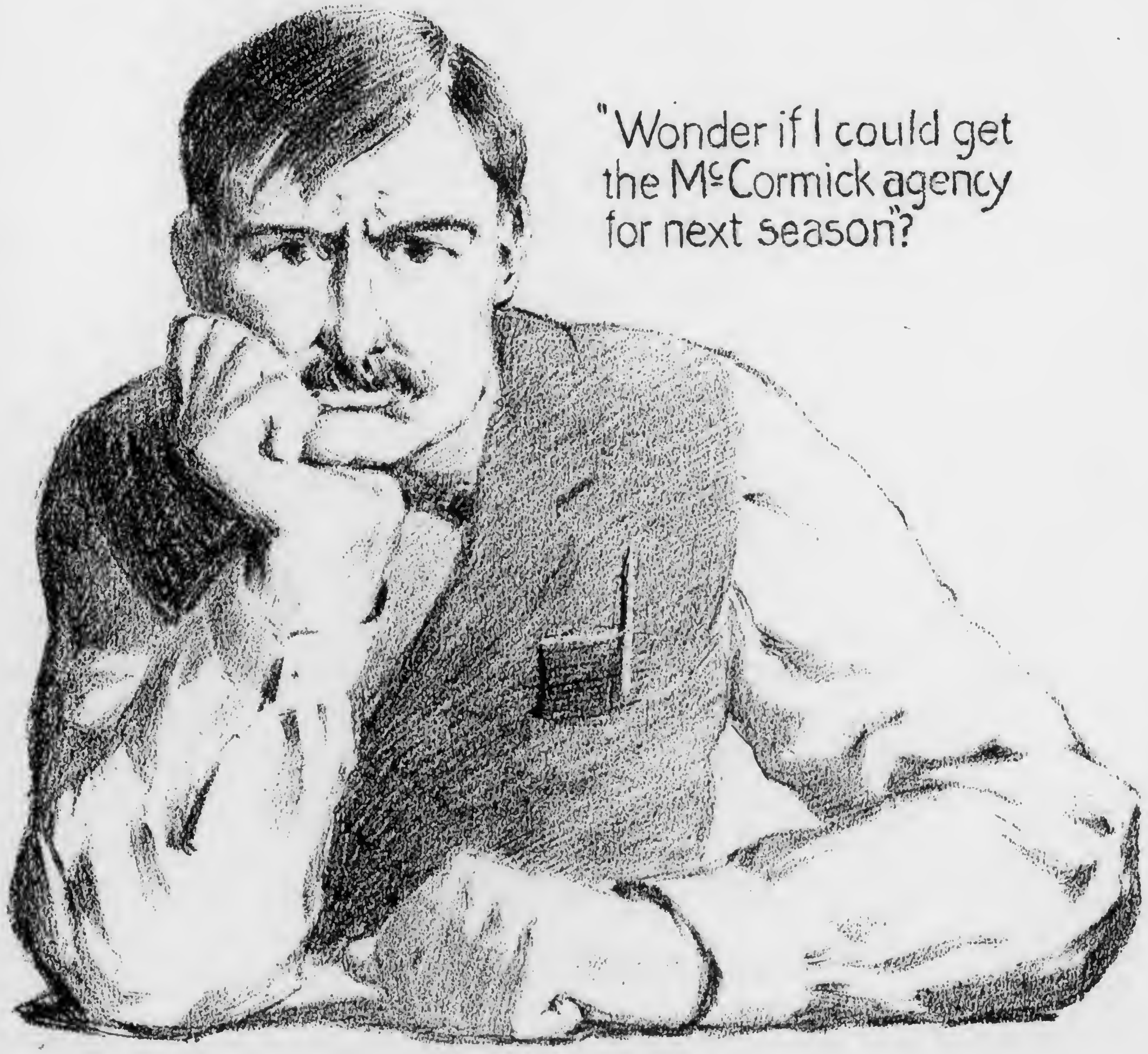
HODGES LADDIE Hand-Dump Rake.

Acme Harvester Co.

Peoria, Illinois, U. S. A. B-17 Produce Exchange, New York City.

HODGES LADDIE Hand-Dump Rake.

THE QUESTION


"Wonder if I could get the McCormick agency for next season?"

In deciding which line of harvesting machines you will handle for the coming year, we would suggest that you look about you and observe who have been the successful dealers.

Are there many agents other than McCormick's who have had a good trade for a term of years, and been successful and made money?

Are not McCormick agents the leaders in their line?

If, after careful consideration of this subject, you answer this question to yourself as we believe you must it will be unnecessary to advise you as to what you should do.

TEN MONTHS' EXPORTS.

An Increase of $2,300,000 Compared with Ten Months of Last Year.

The following shows the value of the exports of reapers, mowers, plows, cultivators and other implements from the United States to foreign countries for ten months ending October 31st, for the years 1898, 1899 and 1900, and for October, 1899 and 1900:

ARTICLES AND COUNTRIES.	OCTOBER— 1899. Values.	OCTOBER— 1900. Values.	TEN MONTHS ENDING OCTOBER. 1898. Values.	TEN MONTHS ENDING OCTOBER. 1899. Values.	TEN MONTHS ENDING OCTOBER. 1900. Values.
Mowers and reapers, and parts of	$149.983	$254,564	$6,393,123	$9,377,945	$10,492,007
Plows and cultivators, and parts of	104.561	112,081	892,978	1,475,659	1,862,918
All other, and parts of	103.297	214,248	1,189,771	1,781,045	2,622,755
Total	$357,841	$580,893	$8 475,872	$12,634,649	$14 977,680
United Kingdom	$15,402	$35,618	$1,204,185	$1,307,787	$1,323,169
France	5.917	17,719	1,278 981	1,764,186	2,927 791
Germany	21,703	19 030	1,222,655	1 681,004	2,834,396
Other Europe	23,308	24.388	1,453.651	2,643 953	2,860,060
British North America	42,397	42,843	1,072,206	1,668,009	1,673,158
Central American States and British Honduras.	167	5 284	5.610	5.904	9,978
Mexico	27,729	63,855	126,452	262,398	506,668
Santo Domingo	495	33	354	1,239	1,444
Cuba	13,976	7,476	4,028	93,202	143,066
Porto Rico	533	....	677	4.915	3,412
Other West Indies and Bermuda	508	667	7,286	10,369	7.277
Argentina	121,840	214.568	933.014	1,787,054	1,234,830
Brazil	3,525	1,846	20,474	28,770	23,414
Colombia	134	185	3,935	711	1.720
Other South America	4,959	22,404	248,356	247,442	279,881
British East Indies	169	96	5,161	8.367	3.563
British Australasia	41,689	107,536	637,684	742,192	832,107
Hawaii	1,334	....	....	10,080	7,161
Philippine Islands	16	2	341	26	3,807
Other Asia and Oceanica	225	1,859	58,054	53,799	88,203
Africa	31,878	15,484	192,671	313,242	182,575
Other countries	....	....	97	....	....
Total Agricultural Implements	$357,841	$580,893	$8,475,872	$12 634,649	$14.977,680

It will be noticed that the exports of implements and machinery have been nearly double from 1898 to 1900—in ten months' comparison—and that October, 1900, shows a large increase over the same months for 1899.

The heaviest exports were to the manufacturing countries—Great Britain, Germany and France, with Argentina closely following. This fact demonstrates that the best policy in trade is for the people of a country to purchase from those of other nations. Competition is not feared when the best only is sold. No manufacturer fears another if his goods are meritorious. American implements go everywhere, and the figures given show that they are appreciated, as evidenced by the large increase in trade with other countries.

PATENTS AND SKILL.

"We scarcely ever patent anything nowadays," said the representative of a big house which makes wood-working machinery of all kinds, says the "New Orleans Times-Democrat." "A patent is simply a license to litigate, and it generally costs more to prosecute an infringer than the thing is worth either in damages as an example to others.

"What we really look to for protection is the superior skill and celerity of the American mechanic. As a nation we have made rapid progress in machinery during the past few years. While some less progressive imitator is plodding away on an imitation of one of our machines the model has become obsolete, and we have replaced it with something better.

"Another important point is this: Our improved shop tools, our scientific methods of handling material and the ingenious manner in which we utilize what are called by-products so as to minimize waste, are enabling us to turn out machinery as cheaply as the foreigners, in spite of the fact that we pay nearly double their wages. From present indications that gratifying state of affairs seems likely to continue, and it does away with the bugaboo of foreign cheap labor, which has heretofore menaced the business. It proves that a cheap product doesn't necessarily mean low pay."

RAPIDLY INCREASING.

The manufacturers of the United States are rapidly increasing their share in the foreign commerce of that country, says the London "Commercial Intelligencer." Nearly one-half of the importations are now for their use, and more than one-third of the exportations are their products. Their importations during the nine months ending with September, 1900, amounted to £56,000,000, while their exports of finished manufactures in the same time amounted to £67,600,000. Never before in the history of the United States have the manufacturers imported so much material for use in manufacturing, or exported so much of finished manufactures. During the last four years they have increased their importation of materials for use in manufacturing more than 50 per cent., and increased their exportation of finished manufactures more than 80 per cent.

South America sells largely to the United States, and the merchants of the Spanish republics will find it to their advantage to use American implements, as they can have them made according to the service required.

OUR AUSTRALIAN MARKETS.

The German Consul-General at Sydney reports to his home Government that the Australian market has been largely taken possession of by American industry. Last year, he says, the colony of New South Wales was flooded with American goods, and this has continued through the current year without interruption. Furthermore, he records the remarkable fact that the gain of American business has been made for the most part at the expense of German trade.

The following is a comparison of the imports from Germany and the United States for the past six years:

	Germany.	United States.
1894	£345 364	£542,427
1895	425,697	624,268
1896	690,843	1,729,871
1897	900,474	1,887.877
1898	771,626	1,602,954
1899	856,032	2,219,319

In seeking for the reasons why the imports of American goods have increased so rapidly, the Consul finds that it is not merely the capacity of our factories and the quality of our manufactures that explain the phenomenon. He points out that American manufacturers and merchants have pushed their trade in Australia with praiseworthy energy and persistence; and this, together with their willingness to meet the wishes of Australian buyers, has led to the great increase of American trade there. Competent American agents for the various lines of goods, says the Consul, are continually traveling over Australia; and advertisements, price-lists and other printed matter are distributed with a lavish hand. Larger American firms have their own permanent representative in Sydney.

After pointing out the above facts, the Consul draws his application for German manufacturers. He says that if they wish to insure for themselves a reasonable part of Australian trade they must devote more attention to the market there. Especially he recommends the appointment of agents who shall look after the interests of German manufacturers on the ground, by coming into direct personal contact with buyers. This, he says, would remove many causes of complaint which arise from the fact that German goods for Australia go by way of England, and are handled by agents living in England. He further recommends that the agents be equipped with large collections of samples; that tastefully printed catalogues, in the English language and using English weights, measures and money, be distributed by the agents. Prices must include packing and freights to an Australian port. Special importance is attached to packing. When the boxes are too large for the goods ordered they are not to be filled out with wares not ordered. The agents' commissions must be liberal, when an article is to be first introduced, for this requires much time, labor and patience; and, in general, expense must not be spared at the start; for it is a false notion that the excellence of an article is alone sufficient to make it sell. Hence, concludes the Consul, the necessity of continually singing the praises of your goods.

MADE BY
THE PLANO MFG CO.
CHICAGO U.S.A.

En una apuest a con doce otras segadoras en la mayor hacienda de los Estados Unidos, cuya extensión esde 266,000 acres, la dalladora de cadena "Jones" ganó el primer premio por la ligereza en el tiro y la perfección en el trabajo.

LIGEREZA EN EL TIRO

Hacinadoras
Dalladoras
Segadoras
Espigadoras
Rastrillos Para Heno
Hoces de Molinillo

PLANO

El más sencillo y perfecto surtido de maquinarias segadoras en el mundo.

TUVO LOS HONORES EN EL 99.

Millares de comerciantes inteligentes duplicaron y triplicaron sus negocios con ellas en el 98 y 99 y Uds. duplicara los suyos en 1900.

La hacinadora de palanca de Jones en el triunfo de la época, reconocido por todos.

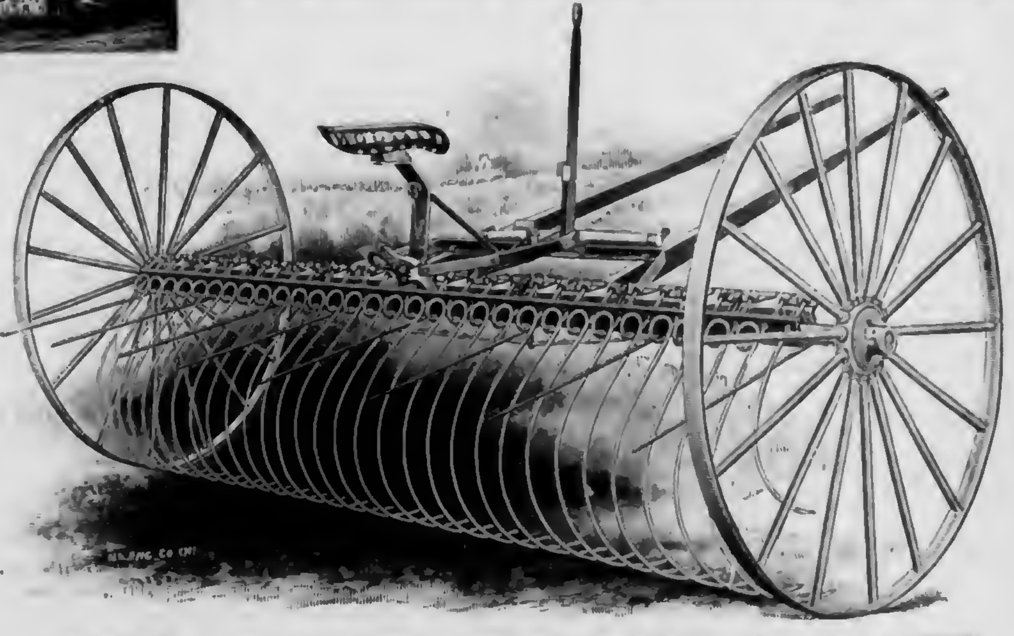
No hay dalladora comparable con la dalladora

"JONES"

DE IMPULSO DE CADENA.

Es la sencillez misma, la durabilidad y perfección. Por muchos años ha desafiado la competencia del mundo entero, y será su venta de mucho provecho para los comerciantes de todos los países.

La segadora "Jones" es la única perfectamente ajustable y la unica que se fabrica con balancín de resorte.



El rastrillo ajustable "Jones," para heno, no tiene rival, tanto en sus ventas como en su trabajo.
El único rastrillo ajustable para heno en el mundo.

Escríbase pidiendo el catálogo descriptivo.

THE Plano MANUFACTURING COMPANY
CHICAGO, ILL., E. U. A.
115 Southwark Street, - LONDRES, E. C., INGLATERRA.

CHINESE IMPLEMENTS.

The Chinese hoe is a clumsy instrument, writes the United States Consul at Tientsin. It has a surface more than 6 inches square, and its function is to cut weeds in two, and to stir the soil from beneath, without to any extent removing it. The plow is always small, with but one handle, the moldboard having a very few inches of surface, and being always designed for surface work only. The plows are frequently drawn by men and women. No Chinaman has the smallest conception of such a thing as deep plowing, and he would be horrified at the idea of turning all the valuable surface soil underneath. The harrow is not unlike the kind we used a hundred years ago, and the farmer often has a brush drag for a convenience. He depends upon the winter frosts, however, to do most of the work of pulverizing the lumpy soil, and in the spring it is always easy to get the ground which was plowed in the fall into shape for planting.

Farming is not carried on in a large way in China. Farms ranging from half an acre to five acres constitute the large and small holdings; they do not require reapers, mowers, threshing machines, or steam plows. The Chinese dead seem to have preëmption rights over all the hills and hillsides, leaving only the plains and valleys to the living—even these are encroached upon by the coffins of past generations.

The people build dikes of mud, inclosing, say, half an acre each, often making them from 3 to 6 feet high, to receive and retain the spring rains. Into the water they go—men, women and children—and work until their little farm is planted in rice. Most of their time after the spring rains are over is spent in treading the carrier pumps or bringing water and pouring it on the rice plants until the harvest time comes. I have no doubt hoes, rakes, shovels and cheap hand rice hullers would find a market here, for the American implements are as far ahead of what they use as a diamond is superior to a sandstone.

The localities where wheat or barley is raised have farms about the same size. The plow is a light affair, made of a crooked stick, with a steel point fastened to it, and is pulled by a water buffalo, a kind of half-breed between Texan cattle and the Western buffalo. Because he loves to wallow in the water, with his nose, eyes and ears above that element, he is called water buffalo. When he is used for plowing they attach a rope to the machine and slip a loop around his neck; being powerful and the plowing being shallow, he pulls the plow with the rope on only one side. They plant wheat just as we would plant corn; they do not sow it.

When harvest time comes, men and women take a blade inserted in a short handle at an angle of about forty-five degrees, and proceed to cut the grain, bind it carefully, and carry it to the threshing floor near their buildings. This floor is a hard, beaten spot of ground about 20 feet in diameter. The water buffalo, muzzled and attached to a stone roller, tramps and rolls the grain out of the ear. After the threshing is done, they throw wheat and chaff in the air and allow the wind to blow the chaff away. When the wheat is thus winnowed, they gather it up, put it into bags, and pound what they need for use in a stone mortar. Scythes, small hand threshers, fanning mills and some cheap apparatus for grinding would find a large market in time.

DIRECTORY FOR BUYERS.

On additional pages will be found a directory for buyers. The names of firms given in the directory, together with the goods mentioned, are arranged for the convenience of buyers. The establishments are among the leading ones in the United States, are strictly reliable, have extensive facilities, and are prompt in transacting business. They fully understand the export trade and carefully look after all foreign orders. The EXPORT IMPLEMENT AGE is kept on file in their offices, and any mention of the journal will be an incentive to even greater promptness on their part in obliging you. Inquiries from foreign buyers desiring information relative to American agricultural machinery or implements addressed to them will be given careful and prompt attention. Write in any language you prefer.

A SPANISH CATALOGUE.

James Leffel & Co., Springfield, Ohio, U. S. A., have recently issued a 40-page Spanish catalogue, fully describing and illustrating their complete line of engines and boilers. The catalogue "I," which will be mailed free upon application, contains a vast amount of valuable information, and those interested will be well repaid by sending for it.

DESTROYING PREJUDICE.

The great drawback to the rapid expansion of our export trade in agricultural products is the inertia of the peoples of other countries to the cheapness of labor, and to the habits deeply ingrained of doing all kinds of labor by hand. Over large areas of Europe plowing is done by a one-handled plow drawn by one horse, which the plowman holds with one hand. In many places milch cows are utilized to do farm work, and instead of cultivators heavy hoes in the hands of plodding women are used. Instead of mowers short broad scythes are resorted to, behind each of such mowers walks a woman with a rake. Most of the grain is cut by a cradle which, instead of fingers, has two bows fastened to a snath covered with cloth, to carry the grain as it is cut. Under this slow and laborious process much grain becomes overripe before it is cut.

It is against such conditions as these that American implement enterprise has to struggle. Our skill would do away with the long harvest days and exhausting toil. Our implements would keep women at home and give them leather for wooden shoes, and afford men time to learn that their fields are not all there is to cultivate.

That the peasantry of Europe will yet open their eyes and realize that their industrial liberation is within their reach, if they will only reach for it, may be regarded as certain as that civilization is stronger than barbarism.

As showing the extent to which manufactured products of American make are handled by British merchants, it is only necessary to glance at the outward manifest of any vessel leaving New York for any part of Great Britain. Just to London and Liverpool the total shipments of merchandise from New York port during the last week of November reached a value of more than $3,500,000. A careful review of what constitute these shipments shows that upwards of 75 per cent. of them are made up of manufactured products, and a very large share of the goods sent are made up of articles for which England is preeminently a competing country.

Double Tube Lightning Insect Exterminator and Sprayer

with Detachable Glass Reservoir.

A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy, and it does save time.

Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.

It is light, but well made; is cheap; and repairs, if needed, obtained in the smallest village.

Packed in cases of three dozen for foreign trade.

Circulars and prices free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

Make Your
Cow Comfortable

Protects Cows and Horses from torture by flies.

IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.

It is entirely harmless, and does not injure the coat of either cows or horses, and it will keep flies from stock during the summer months.

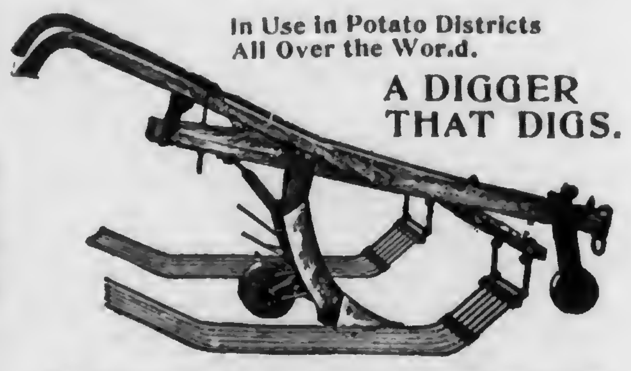
To be applied with a sprayer, but works best with our Double Tube Lightning Insect Exterminator and Sprayer.

FLY KILLER OIL
H. W. DOUGHTEN
MOORESTOWN
N. J.
U. S. A

Put up in one-gallon cans, one dozen cans to a box. Booklet and prices free upon application.

H. W. DOUGHTEN, MOORESTOWN, N. J., U. S. A.

King of the Potato Field.



In Use in Potato Districts All Over the World.

A DIGGER THAT DIGS.

Most simple in construction, yet combining every essential principle to make a successful machine. Reasonable in price and within the reach of the smallest and poorer farmer. Full and complete description, with prices, will be sent free upon application.

H. W. DOUGHTEN, MOORESTOWN N. J., U. S. A.

Chrysanthemum Harvesting in Japan
The Japanese may not harvest Chrysanthemums in this manner but they certainly could.
We know however that the progressive farmers of the world harvest with DEERING IDEAL BINDERS, MOWERS, REAPERS & HAY RAKES
AND THAT
DEALERS WHO HANDLE DEERING LIGHT DRAFT IDEALS ALWAYS HAVE A PROSPEROUS HARVEST.
"IT PAYS TO BE A DEERING AGENT."
DEERING HARVESTER COMPANY
(A COPARTNERSHIP)
CHICAGO U.S.A.

WEAR AND TEAR IN BUSINESS.

There is nothing surer than that feverish rushing in business is in violation of some unwritten but fundamental principle of existence. The wagon makers may find this out sooner than the implement maker. For three years or so the wagon makers have been exceptionally energetic, and have turned out thousands of wagons. Manufacturers in other lines have also been remarkably energetic. The instinct is to rush, and to secure as much business as possible. That is what each and every firm, individual and corporation is now doing. It is what they always did do, and it seems to be the recognized method of doing business, for who knows any other way.

This necessity that drives all business interests to rush and work at fever heat and mind-wearying speed is here referred to merely to make some observations. First, this whole thing is an evil; it violates economic laws. Nature is ever methodical, except when it is not. Our grab-grab methods do not expand the volume of business sufficiently to warrant the expense and wear and tear of our high-pressure methods. Our traveling men swarm hither and thither at all seasons. Our factories rush at top speed —even at night. Machinery is run at the highest speed that the strength of steel and the flow of grease, and the hands, and fingers, and eyes of the nerve and muscle-strained mechanic can endure. Every manufacturer knows this. Every jobber who has gone through one of our modern shops knows this. This strain, speed, feverish, impetuous body and soul-racking rush is a moral evil, an economic sore, a demoralizing agency, and it will be corrected, but not now.

The momentum of this modern development of mechanical energy is on and no force can stop it. Engines and wheels will go faster; steam pressure in cylinders will increase, mightier machinery is coming, a greater output per day, hour, minute and second is to mark our progress. The capacity of human endurance is to be strained more and more. Machinery is to shake its giant arm at Labor and make it tremble.

But, what of all this. Simply this, to-day manhood is subordinate to production and wealth-getting. To-morrow he will assert his supremacy, or else the soul is a phantom and the Divinity within us is a myth. The subordination of our higher self to mere getting is the intellectual and economic vice of this age. The time is approaching when broader and more comprehensive views of life and of business will prevail, but it is a matter of education, of evolution, of following that inner light that never ceases to burn within us.

DISPLAYING AMERICAN PRODUCTS.

The purpose to display American products in foreign countries gathers strength even though the growth of warehouses abroad is slow. It is not intended to stop with the warehouse method was, and is, only the first other methods shall be suggested by experience. It is, of course, impossible to adopt American methods in foreign lands, with their methodic traveling and displays, through catalogues and in other ways. The warehouse methods was, and is, only the first step. It will answer until the second step can be taken. Good as it is, implement manufacturers recognize something else must be done. The importance of this appears when the cost of selling an implement at home is figured out. The houses at Caraccas, Hamburg and Shanghai afford valuable but still limited facilities to let foreigners see what we have to sell, but some foreign users, unlike American farmers who use implements, do not attend fairs, do not watch their neighbors and do not follow the trade press as do our American users. They remain more at home, read and see less, and therefore have to be approached in a different way. It would be very interesting reading were the actual experience of foreign dealers in introducing our implements set forth. It would reveal to us what course to pursue beyond the warehouse method. Plans are being evolved to this end which will be set forth as soon as some definite steps are taken.

ABOLISHING AWARDS.

In Europe awards are made at the agricultural shows, with the result that while considerable ill-feeling is generated, no one is benefited nor do the awards really indicate superiority. The "Australian Ironmonger," in considering this matter, says:

> "The competitive principle in connection with exhibitions has fallen into disrepute. A feeling has grown that the judging is not always on the merits, but that sometimes, like kissing, it goes by favor. As in the case of the present great French show, awards have often been flung about in such profusion as to rob them of much of their value in the eyes both of the recipients and the consuming public. It remained for Glasgow to establish a new order of things. The bodies on the Clyde are not going to give any awards at their international exhibition next year, for which preparations are now being made. All exhibits are to be non-competitive. Some may see behind this decision a national trait—a desire on the part of the canny people, who made a good profit on their last exhibition, to make a better one on this. But we are not of the number. 'Let Glasgow flourish,' and her exhibition prove a success!"

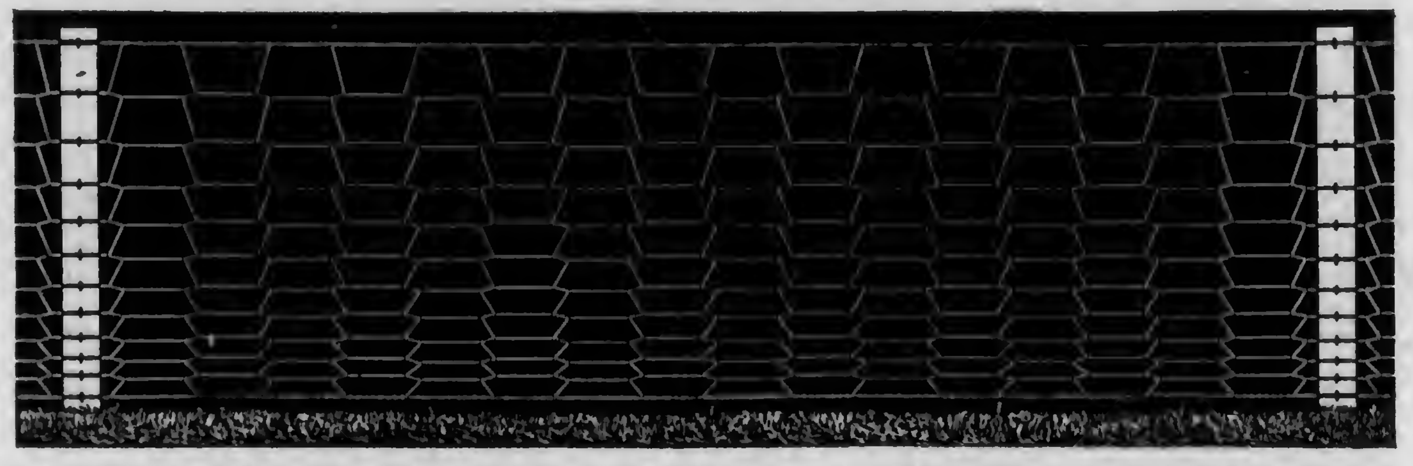
Awards are expensive as well as useless. In this country, so far as implements, machinery and vehicles are concerned, they have long ago been abolished, not only with advantage to exhibitors but to the agricultural associations as well.

THE JAPANESE FIELD.

Japan took $400,000 worth of American finished products during the first week of October. The agricultural prospects of that little empire are looming up. Though Japanese methods are very different from American, yet those who are looking after Japanese trade find a good field where the best implements only are wanted.

KEYSTONE WOVEN WIRE FENCE CO.,
....MANUFACTURERS...

Farm,
Lawn,
Poultry
and
Railway
Fencing.

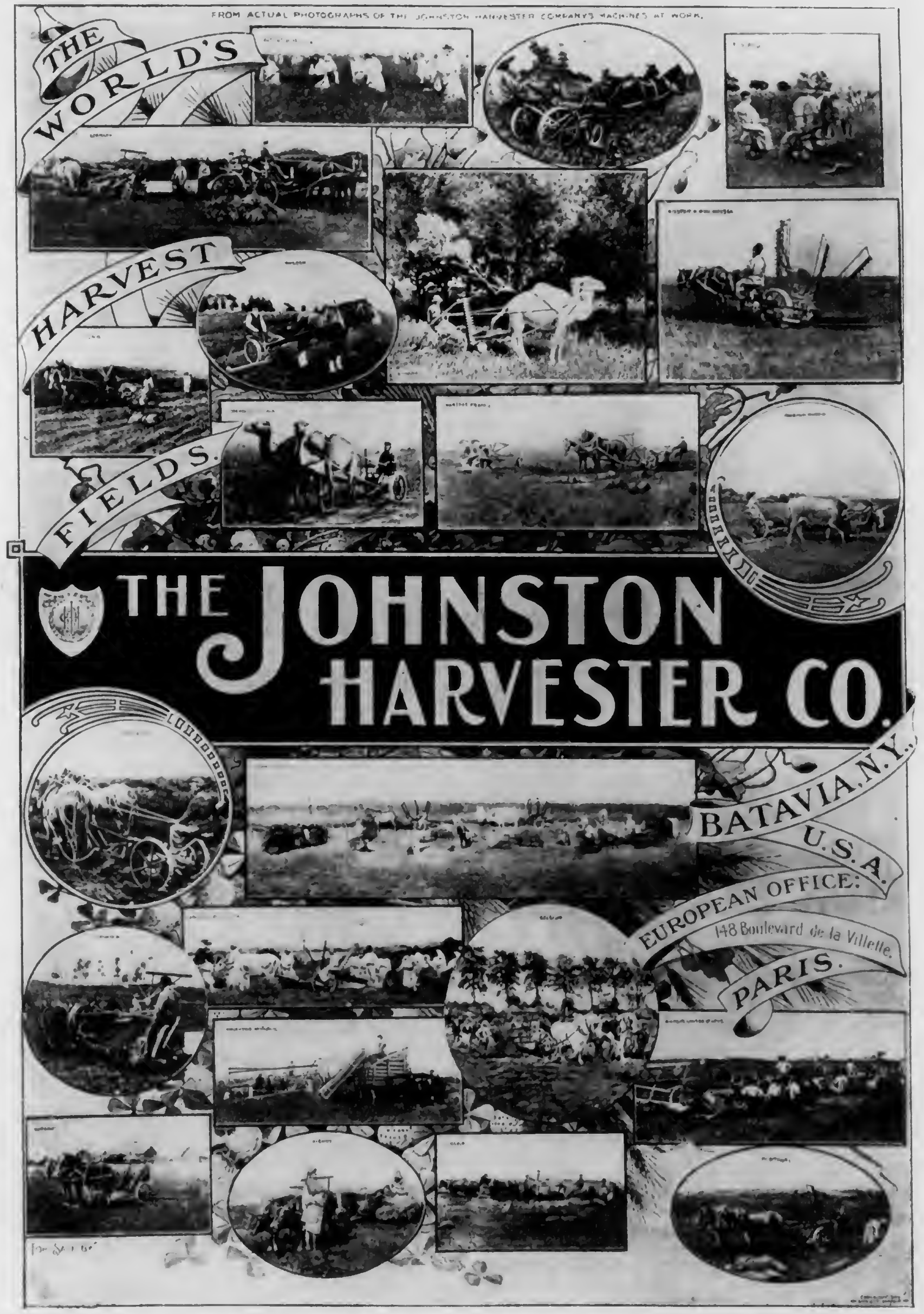


Steel Gates
Ornamental
Fencing,
Fence
Stretchers,
etc., etc.

Our line of Fencing has been on the market for the past eleven years. Made of best quality of galvanized steel wire.
WORKMANSHIP FIRST-CLASS. REPUTATION UNEXCELLED.
Write for Catalogue and Prices.

4300-4400 South Adams Street, - Peoria, Illinois, U. S. A.

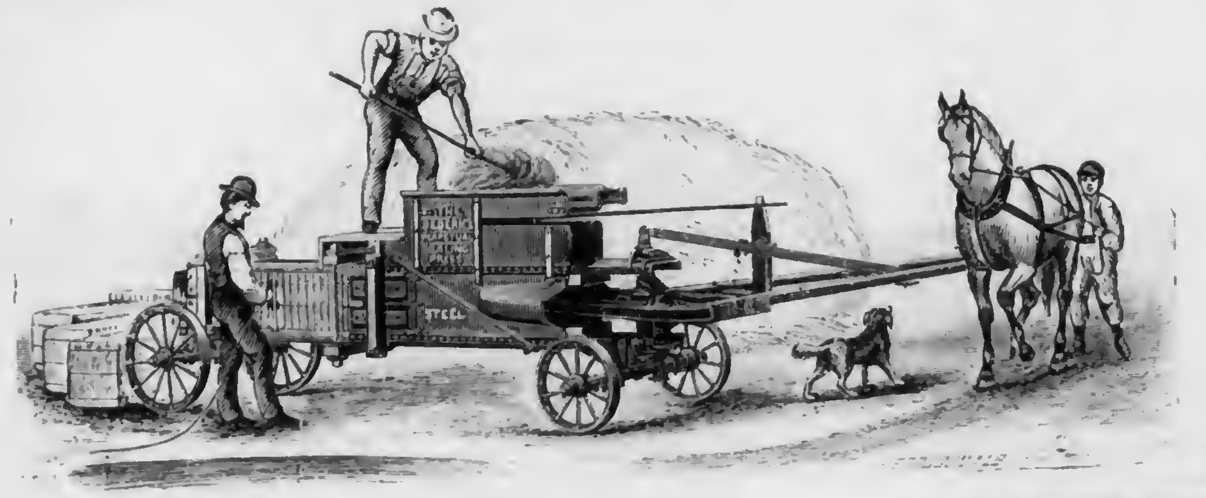
FROM ACTUAL PHOTOGRAPHS OF THE JOHNSTON HARVESTER CO.'S MACHINES AT WORK.

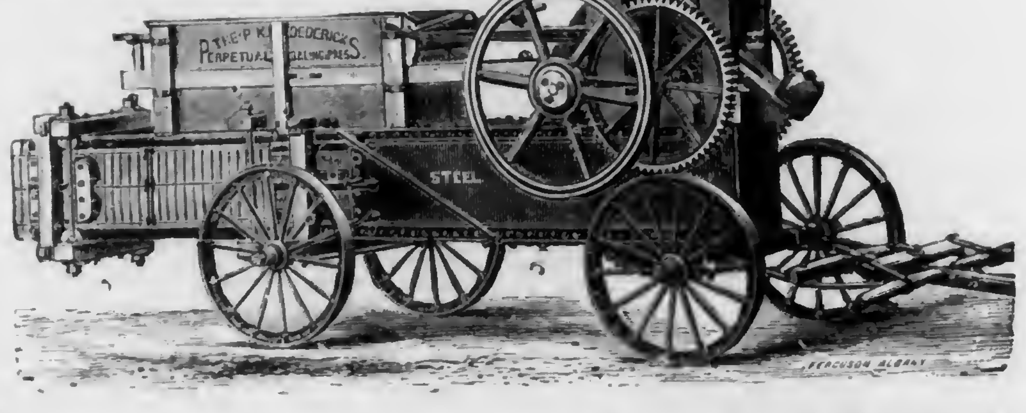

FROM ACTUAL PHOTOGRAPHS OF THE JOHNSTON HARVESTER COMPANY'S MACHINES AT WORK.
THE WORLD'S HARVEST FIELDS
THE JOHNSTON HARVESTER CO.
BATAVIA, N.Y., U.S.A.
EUROPEAN OFFICE: 148 Boulevard de la Villette, PARIS.

The JOHNSTON HARVESTER CO.
Write for Catalogue.
BATAVIA, N. Y., U. S. A.

HAY BALING MACHINERY.

We show on this page an illustration of Dederick's patent continuous belt press, manufactured by P. K. Dederick's Sons, Albany, N. Y., U. S. A. This press is geared and adapted to be driven by a belt from a horse-power engine or other motor. The machine is powerful in its construction, and is provided with an automatic device, whereby the operation is instantly stopped and started at pleasure. The man feeding the Dederick belt press has nothing to do but to pitch the hay into a large open box, where the machine condenses it and passes it into the press-box, thus each forkful being disposed of as rapidly as it can be pitched. In addition, the press has all the other advantages and patented devices common to the continuous presses of other styles made by this firm. The capacity is from 900 to 3,700 kilos (1 to 4 tons) per hour, and from 9,100 to 18,200 kilos (10 to 20 tons) in a grain car. They are made with either steel or wood case.

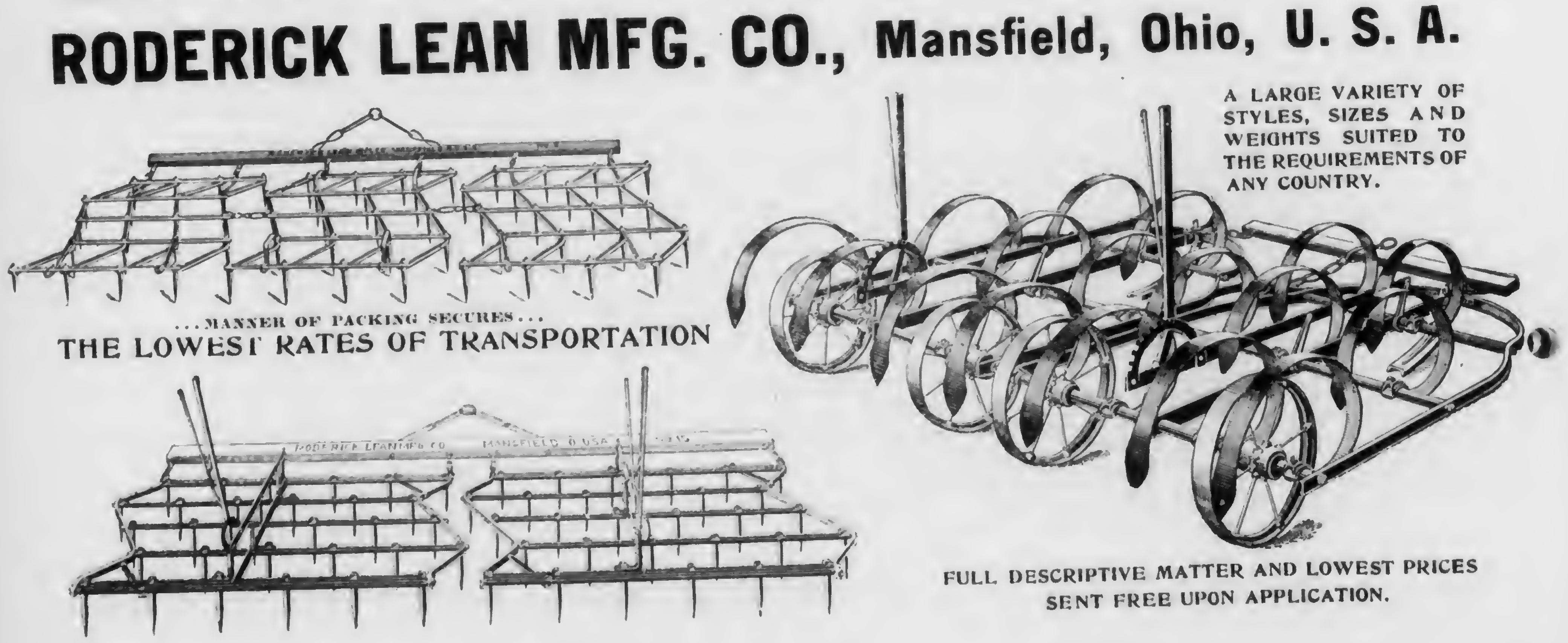



THE P. K. DEDERICK'S PERPETUAL BALING PRESS
STEEL
FERGUSON ALBANY

The manufacturers were pioneers in the construction of hay-baling machinery. The inventor, Mr. P. K. Dederick, has been granted hundreds of patents in this and foreign countries. He invented the first successful horizontal baling press, which revolutionized baling methods and enabled shippers to load grain cars to their capacity in weight. In the place of wood frames, Dederick's presses are made with a simple steel tube or shell, without material increase in the cost of construction, and practically indestructible. By this means, greater strength, rigidity, power and ease of operation is obtained and the weight of the machine is lessened by one-fourth, while the durability is increased more than fourfold. Dederick's presses are made in all sizes and styles, and thousands have been in use the world over for years. The manufacturers issue a fully illustrated catalogue showing their different machines and solicit correspondence with a view of establishing agencies.

OUR GRANDFATHERS' PLOWS.

In describing the plows used in the early portion of the nineteenth century, a writer states that the plows each consisted of a frame about 3 feet long, 12 inches wide; the handles, 3½ inches thick; (the frame) this was oak timber. A mortise hole was cut 4 by 1½ inches to fasten the plow in. The plow was made by a blacksmith, about 15 inches long, 10 inches wide at one end, running to a point at the other. An eye was welded on the broad end with an oval-shaped hole to insert a helve of oak. The frame was put upon this plow and made secure by wedges—no bolts in that day. To this frame was attached two thills about 6 or 8 feet long, 1 inch thick and 3 inches wide, of young white oak or hickory, for the horse to draw the plow. The harness was home-made, of strong wood, usually dogwood, with holes through them to fasten the thills. A collar made of corn shucks, a backband to hold up the thills, a bridle made of rope, made at home with iron bit made by a blacksmith. This completed the outfit for plowing; plow and harness cost not exceeding $3 in labor. A horse worth $50 and a negro worth $800, that was the outfit to start one plow, and each plow cost about the same, depending upon the value of the horse and negro. This was the condition about the year 1835.


RODERICK LEAN MFG. CO., Mansfield, Ohio, U. S. A.

A LARGE VARIETY OF STYLES, SIZES AND WEIGHTS SUITED TO THE REQUIREMENTS OF ANY COUNTRY.

...MANNER OF PACKING SECURES...
THE LOWEST RATES OF TRANSPORTATION

FULL DESCRIPTIVE MATTER AND LOWEST PRICES SENT FREE UPON APPLICATION.
RODERICK LEAN MFG CO MANSFIELD O USA

Aultman-Miller
BUCKEYE
The Oldest Harvester Factory in the World
HONORED BY ALL NATIONS

The MOWERS, BINDERS AND REAPERS made by Aultman, Miller & Co. have held the front rank in the richest farming districts in the world for half a century. The reason is plain. Their machines possess every merit of standard value. They surpass all others in respect to Durability, Convenience and Light Draft. . . .

Aultman, Miller
& Company
AKRON, OHIO, U. S. A.

Our Machines have been Honored by COMPETITIVE PRIZES AT ALL THE GREAT INTERNATIONAL EXPOSITIONS. No machine has harvested such a brilliant array of GOLD MEDALS and FIRST PRIZES as have been awarded to AULTMAN, MILLER & CO., in all the civilized countries of the globe . .

DIRECTORY FOR BUYERS.

The names of firms given below, together with the goods mentioned, are arranged for the convenience of buyers. These establishments are among the leading ones in the United States, are strictly reliable, have extensive facilities, and are prompt in transacting business. They fully understand the export trade and carefully look after all foreign orders. The "Export Implement Age" is kept on file in their offices, and any mention of the journal will be an incentive to even greater promptness on their part in obliging you. Inquiries from foreign buyers desiring information relative to American agricultural machinery or implements addressed to them will be given careful and prompt attention. Write in any language you prefer.

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Si el lector está interesado en Abonos, Elaboración de Acidos, Fosfatos, Nitratos, Potasa, Depósitos, Comprimidoras, Maquinaria para Minería, Elevadores, Cribas ó Maquinaria Ensacadora, no deje de leerlo.

Dirección: The American Fertilizer, Drexel Building, Philadelphia, Pa., Estados Unidos de Norte América. Se enviará un ejemplar gratuito como muestra á las personas que lo pidan.

The American Fertilizer está actualmente en el sexto año de su fundación; su circulación es universal, principalmente en los países que están interesados en la industria de los abonos—tanto los fabricantes como los comerciantes en abonos.

Precio de la suscripción, $2.50. Precio de la suscripción por el Export Implement Age y The American Fertilizer al mismo suscritor, $3.00, por un año.

Drexel Building, Philadelphia, Pa., U. S. A.

MOWER KNIVES, REAPER SICKLES, SECTIONS, ETC.

The Whitman & Barnes Manufacturing Company, organized in 1877 by the consolidation of the Whitman & Miles Manufacturing Company, of Fitchburg, Mass., and George Barnes & Co., of Syracuse, N. Y., were recognized at once by the manufacturers of mowers, reapers and binders as the most experienced and the largest manufacturers in the world of those parts which pertain to the cutting apparatus of those machines.

WEST PULLMAN ILLINOIS.

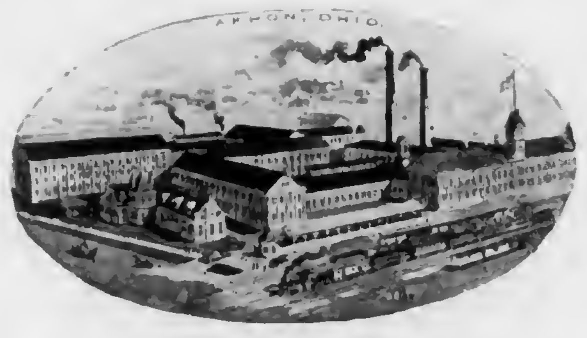
Every one, whether builder or user, knows that the value of either mower, reaper or binder depends largely upon the quality of its cutting apparatus, and for years before this consolidation the two companies were known for the superior quality of their goods, which became the recognized standard of excellence throughout the world.

By consolidation was brought together skill and experience of the two companies, retaining in their employ all of their most valued and experienced workmen, using none but the very best grade of material, and year by year perfecting their machinery and plants so that they might not only retain the valued reputation of their predecessors, but, if possible, add to the same.

Since the consolidation the Whitman & Barnes Manufacturing Company has added from time to time other lines, particularly twist drills, spring keys and cotters, wrenches, thresher teeth, cultivators, lawn mowers and hay carriers.

They have also entered quite largely into the manufacture of rubber goods, having installed in their Akron plant a very complete and modern outfit of machinery for that particular line of manufacture.

Their general office is located at Akron, Ohio, U. S. A., with factories (as illustrated on this page) at Chicago, Ill., U. S. A., Akron, Ohio, U. S. A., and St. Catharines, Ont., Canada. They also have branch stores with warehouses at New York, N. Y., Syracuse, N. Y., Cincinnati, Ohio, Chicago, Ill., Kansas City, Mo., U. S. A., and London, England.



All communications from foreign trade should be addressed to their export house, 111 Chambers Street, New York City, N. Y., U. S. A., or 149 Queen Victoria Street, London, England.

Catalogues illustrating and describing their lines of manufacture will be mailed upon application.

NEW ORLEANS FLOATING EXHIBIT.

At the last regular meeting of the Manufacturers' Association, at New Orleans, La., United States, Messrs. R. McWilliams, H. J. Ledoux, J. W. C. Wright, Leonard Knower and H. P. Maghee submitted the report of the committee on the practicability of chartering a steamer for the purpose of making a floating exhibit of New Orleans manufactures, to visit Central American ports, and ports of the West Indies that could be reached to advantage from New Orleans.

ST. CATHARINES, CANADA.

The committtee agreed upon the following route: Tampico, Vera Cruz, Merida, Belize, Livingston, Puerto Cortez, Bluefields, Port Limon, Boca del Toro. The time consumed for the trip will be about thirty days, which would permit of a side excursion from either Tampico or Vera Cruz to the City of Mexico.

An American bank, with a capital of about $8,000,000, of which a third is paid up, has been organized in Rotterdam, according to Vice-Consul General Hanauer, at Frankfort, Germany. The institution has for its aim the advancement of American trade.

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Wiard Plow Co., Batavia, N. Y. 11
Wyoming Shovel Works, Wyoming, Pa. 22

DEMING PUMPS
ARE USED IN THE
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DEMING PUMPS THE WORLD'S BEST

Pumps for all Purposes.

Cistern and Pitcher-Spout Pumps.
Hand and House Force Pumps.
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Iron, Brass and Brass-Lined Cylinders.
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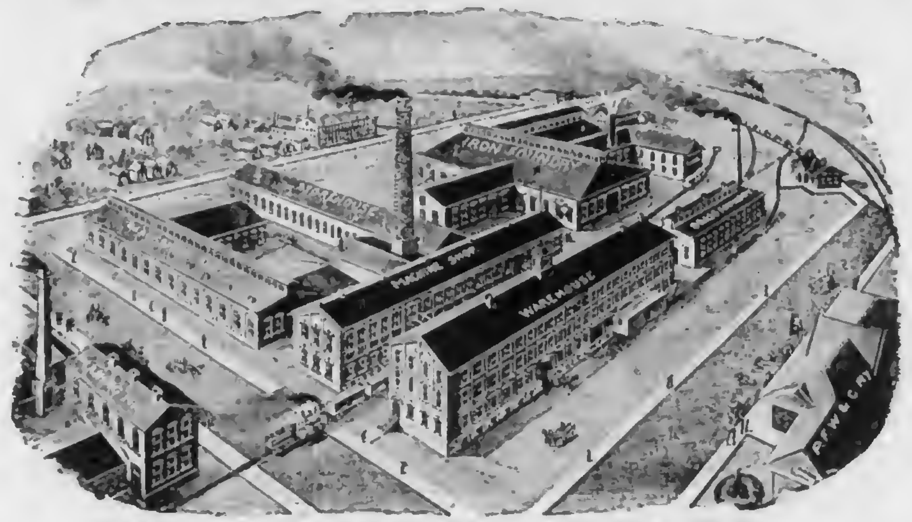
Artesian Well Brass Working Barrels.
Hydraulic Rams and Pumping Motors.
Hydraulic Pressure Pumps.
Boiler Feeding Pumps.



VIEW OF THE BEST EQUIPPED PUMP FACTORY IN THE WORLD.

Pumps for all Purposes.

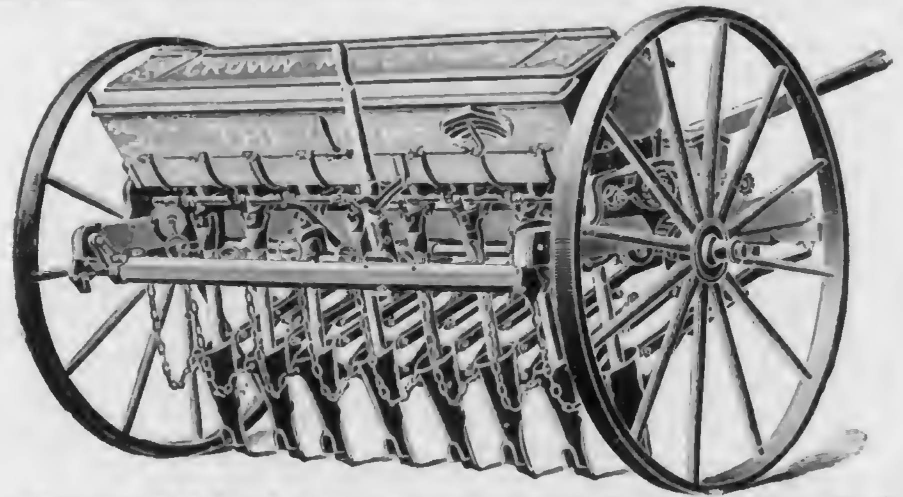
Triplex Power Pumps for Every Duty.
Rotary and Double-Acting Pumps.
Power Pumps for All Purposes.
Horse-Power Pumps for Various Duties.
Railroad and Factory Pumps.
Spraying Pumps and Nozzles.
Garden and Hand Fire Engines.
Irrigating Pumps and Cylinders.
Mine Pumping Machinery.
Fire Extinguishing Pumps.

Importers are supplied with our catalogues and prices in three distinct lines, as follows:
General Catalogue.—Embracing Hand, Wind Mill and Power Pumps, Hydraulic Rams, Well Supplies, etc.
Special Power Pump Catalogue.—Containing Triplex and other Power Pumps for Water Works, Mines, Factories, etc., operated by Gas and Gasoline Engines, Steam Engine, Electric Motor, etc.
Special Spray Pump Catalogue.—Showing Bucket, Knapsack and Barrel Sprayers, Deming Vermorel and Bordeaux Nozzles, Attachments, etc.
A New Complete Catalogue, embracing all goods manufactured by us, will be issued in the Spring of 1900.
DEMING PUMPS are known as "The World's Best." They received highest award at World's Fair, Chicago, 1893, and at the National Export Exposition, Philadelphia, 1899.

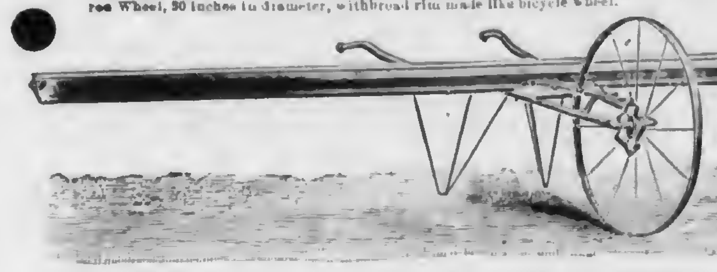
THE DEMING COMPANY,
Manufacturers of Pumps and Hydraulic Machinery
SALEM, OHIO, U. S. A.

NEW YORK OFFICE, 56 and 58 Pine St. Orders may be placed through your New York buyer, who can furnish catalogues and prices on application.

CROWN DRILL Absolute, Positive Force Feed, for Grain, Grass Seed and Fertilizer. Grain Feed Wheels are bell-shaped, giving the utmost capacity. Will sow Kidney Beans, Dent Corn, Southern Corn and Oats, or Beet Seed without cracking or breaking; no Extra Attachments required to plant Corn. It has Gates or Gauges, actuated by a Lever, when moved to graduations on a dial indicated by a pointer, tells Pounds, Bushels, or Fractions thereof, accurately. No Gears to alter, no Loose Wheels to change, no Pinions to lose. Is geared direct to axle—imparts motion instantly. Takes its power from both wheels by Ratchets in Hubs, thus avoiding side-draft. Sows right or left, or in circles, without loss of motion. Can distribute damp or sticky Fertilizers evenly. Will sow Plaster or Ashes, when others fail. Has Shut-Offs, in Grain and Phosphates, for drilling in rows. Has a separate Grass Seeder Box by which seed can be sown either before or behind the hoe by a simple change. Has a perfect, self-acting Spring Hoe with double reversible Steel Point; no stopping for rocks, stumps roots or stones; with this Spring Hoe the teeth can be pitched to sow deep or shallow without moving a bolt.



CROWN SEEDER For sowing all kinds of Grass Seeds. Will sow from 30 to 40 acres per day. Iron or Wooden Frame. 14 or 16 Foot Box. Light; Strong; Durable. Wire Agitator not affected by the weather like a cord. All Iron Wheel, 30 inches in diameter, with broad rim made like bicycle wheel.



SEND FOR CIRCULARS AND TERMS TO
CROWN MANUFACTURING CO.,
Phelps, N. Y., U. S. A.

NEW CASE GANG

A Plow that takes with the Foreign Trade.

Quality, The Finest Made.

We also make a complete line of
Walking Plows Steel or Chill. **Cultivators** 5-Tooth and other styles.
Harrows Disc, Lever and Spike-Tooth.

Catalogue and full information free on application. Address,

J. I. CASE PLOW WORKS
RACINE, WIS., U. S. A.

Sharples Cream Separators

Universally used by thousands of America's Leading Dairymen.

The Sharples Tubular Cream Separators

Represent the last greatest stride in improved cream separator construction.

SIMPLE, DURABLE, EFFECTIVE. SMALL POWER—LARGE CAPACITY.
ABSOLUTELY SAFE. HANDSOMELY FINISHED.
"THE BOWL ALONE REVOLVES."

A Complete Line of Dairy and Factory Sizes for Export.

Cable Address. SHARPRUS, Philadelphia. A, B, C, or Lieber's Code.

P. M. SHARPLES, WEST CHESTER, PENNA., U. S. A.

EL MEJOR SEPARADOR DE CREMA DE MUNDO.

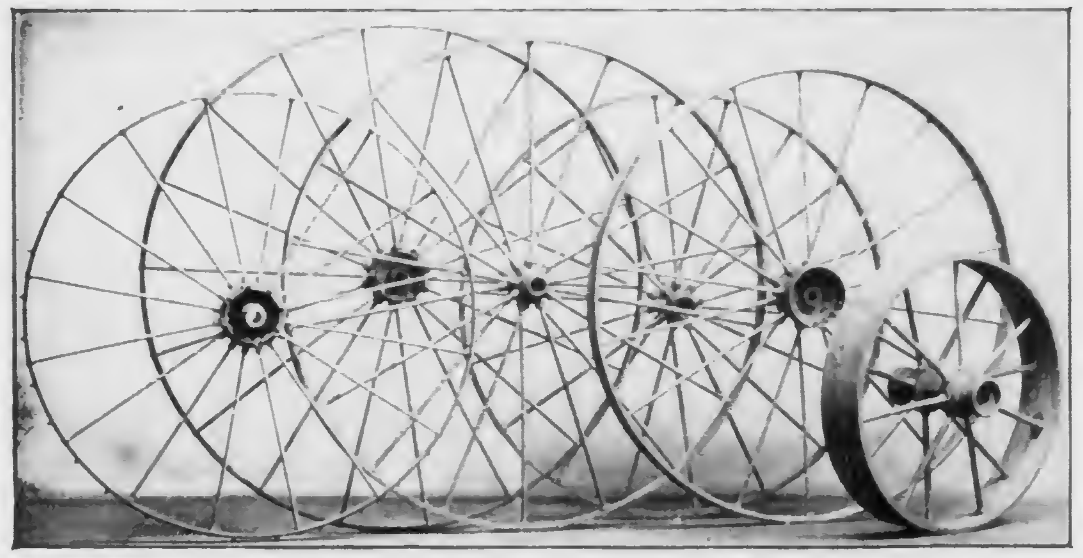
SEPARATING CAPACITIES, PER HOUR, of the Sharples Cream Separators.

DAIRY SIZES.

Buttercup Hand	75 liters
W. H. S. Hand	135 "
No. 1 Safety Hand	145 "
No. 1 Little Giant	145 "
No. 4 Tubular Hand	200 "
No. 6 Tubular Hand	300 "
No. 9 Tubular Hand	400 "
No. 6 Tubular Steam Driven	300 "
No. 9 Tubular Steam Driven	400 "

FACTORY SIZES:

Standard Russian	650 liters
Imperial Russian	975 "
Standard Belt	650 "
Imperial Belt	975 "
No. 25 Tubular	1,120 "
No. 32 Tubular	1,430 "
No. 45 Tubular	2,010 "
No. 60 Tubular	2,690 "



All kinds and sizes of metal wheels built on advance quantity specifications, for manufacturers only.

—THE—

Bettendorf Metal Wheel Co.

Factories at Davenport, Iowa, and Springfield, Ohio, U. S. A.

Capacity over 150 tons finished wheels per day.

Cable Address: METALWHEEL.

BINDER TWINE.

(CELEBRATED CROWN BRAND.)

THE LARGEST MANUFACTURERS---THE BEST TWINE IN THE WORLD.

THE UNION SELLING CO.

LONDON OFFICE: 127 FENCHURCH ST., E. C.
HOME OFFICE: 17 STATE ST., NEW YORK.

MILLS IN U. S.
- Allston, Mass.
- Chelsea, Mass.
- Boston, Mass.
- Brooklyn, N. Y.
- &c., &c., &c.

When ordering through your commission house or direct, please be particular to specify "CROWN" brand.

TEXTE FRANÇAIS. PAPIER ROSE.

TEXTO ESPAÑOL. PAPEL AMARILLO.

DEUTSCHER TEXT. BLAUES PAPIER.

EXPORT IMPLEMENT ·AGE·

A MONTHLY MAGAZINE DEVOTED EXCLUSIVELY TO THE EXPORT TRADE IN AGRICULTURAL MACHINERY, PUMPS, WIND MILLS, DAIRY SUPPLIES AND HARDWARE SPECIALTIES.

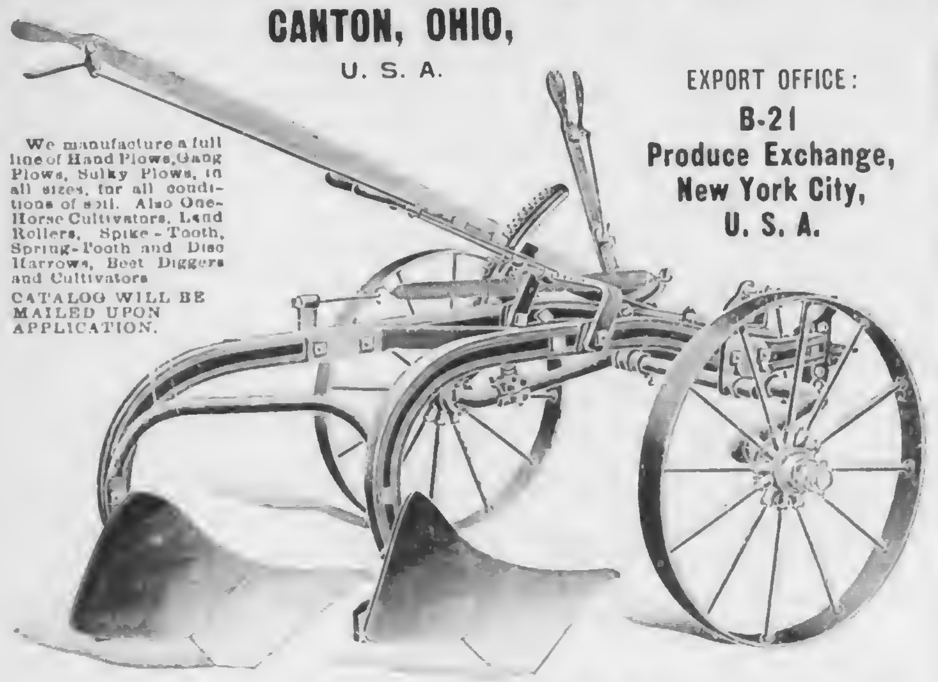
PHILADELPHIA, PA., U.S.A.

Vol. 10. No. 2.

FEBRUARY, 1901.

THE BUCHER & GIBBS PLOW CO.

CANTON, OHIO,
U. S. A.

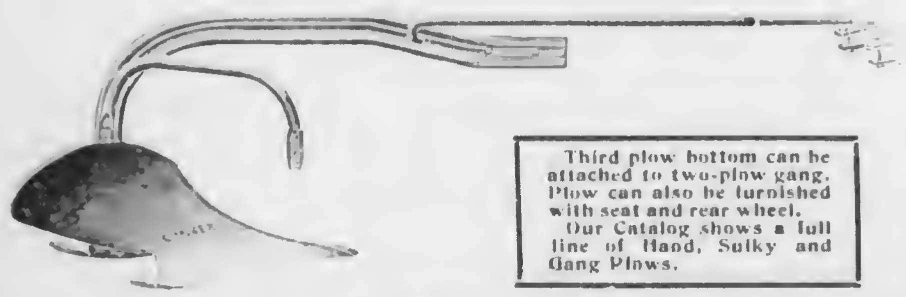


We manufacture a full line of Hand Plows, Gang Plows, Sulky Plows, in all sizes, for all conditions of soil. Also One-Horse Cultivators, Land Rollers, Spike-Tooth, Spring-Tooth and Disc Harrows, Beet Diggers and Cultivators

CATALOG WILL BE MAILED UPON APPLICATION.

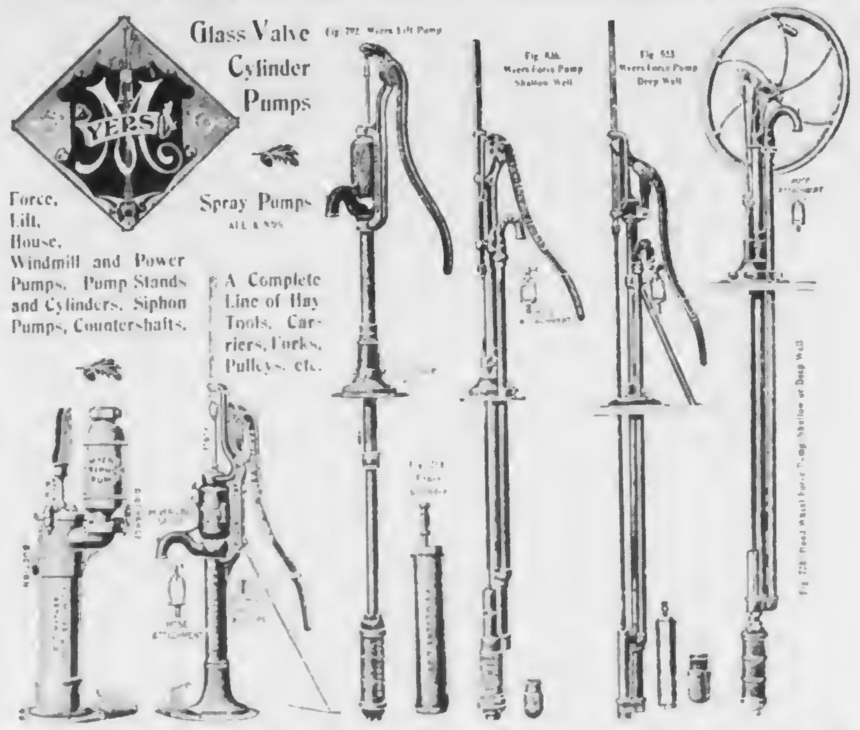
EXPORT OFFICE:
B-21
Produce Exchange,
New York City,
U. S. A.

The above cut represents the IMPERIAL CONVEX WALKING GANG, Moldboard View.



Third plow bottom can be attached to two-plow gang. Plow can also be furnished with seat and rear wheel.
Our Catalog shows a full line of Hand, Sulky and Gang Plows.

F. E. MYERS & BRO., Ashland, O., U. S. A.



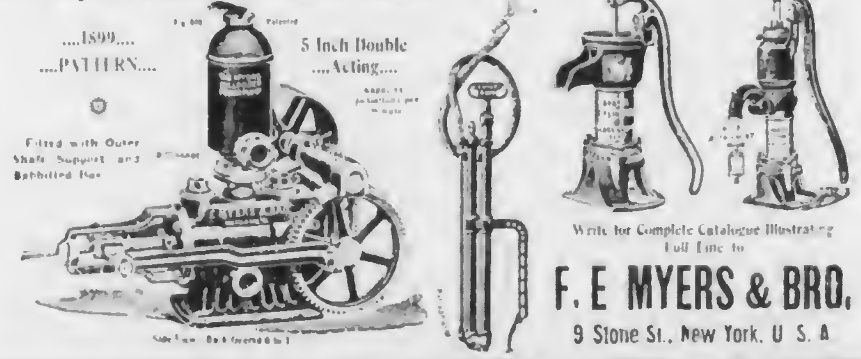
Glass Valve Cylinder Pumps

Spray Pumps

Force, Lift, House, Windmill and Power Pumps, Pump Stands and Cylinders, Siphon Pumps, Countershafts.

A Complete Line of Hay Tools, Carriers, Forks, Pulleys, etc.

The Myers Bulldozer Power Pump



....1899....
....PATTERN....

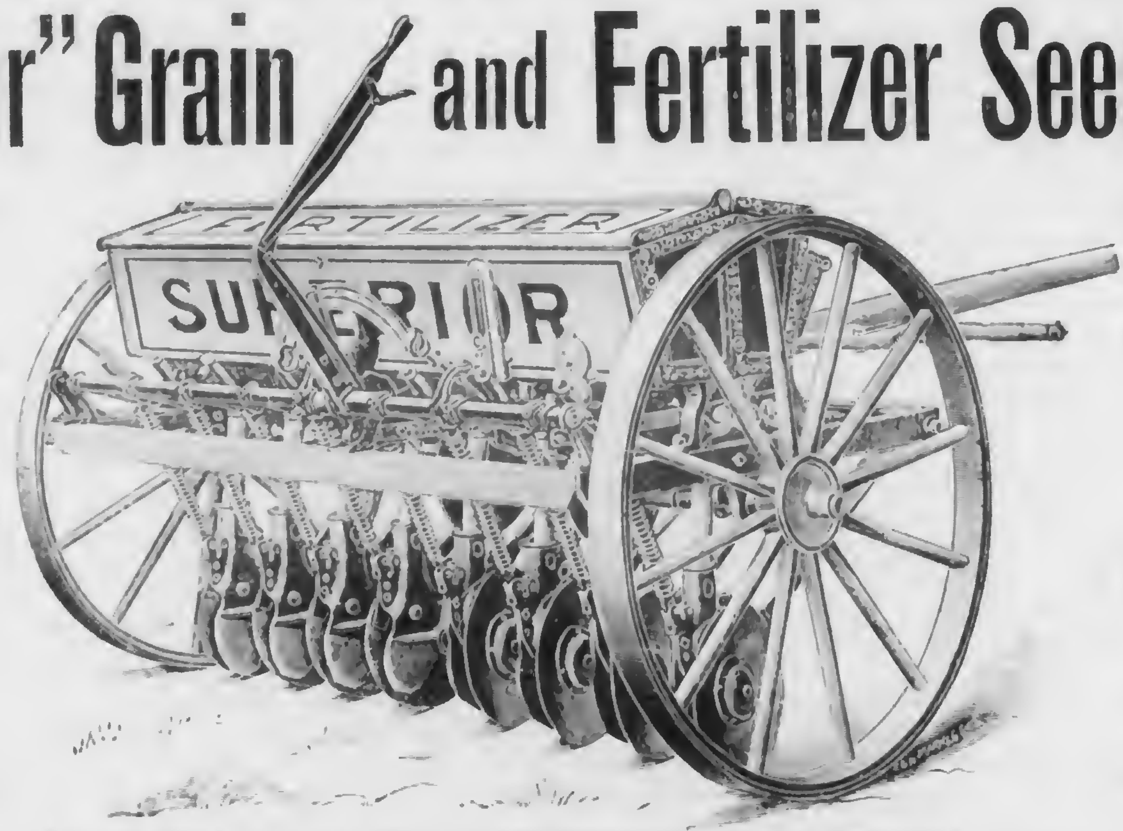
5 Inch Double ....Acting....

Fitted with Outer Shaft Support and Babbitted Box

Write for Complete Catalogue Illustrating Full Line to

F. E MYERS & BRO.
9 Stone St., New York, U. S. A.

"Superior" Grain and Fertilizer Seed Drills



DRILLS WITH
OR
WITHOUT
FERTILIZER
ATTACHMENT

DISC DRILLS
HOE DRILLS
SHOE DRILLS
BEET DRILLS
BROADCAST
SOWERS

COMPLETE
LINE OF
HIGHEST GRADE
SEEDING
MACHINES

"SUPERIOR"
DRILLS
ARE USED WITH
SUCCESS
IN EVERY WHEAT
GROWING
SECTION
OF THE WORLD

CORRESPONDENCE
SOLICITED

Nos semoirs à houe et à disque se fabriquent dans toutes les grandeurs.
Unsere Hacken- und Scheiben-Drillmaschinen werden in allen Grossen angefertigt.
Nuestras Sembradoras de azada y de disco se fabrican en todos tamaños.

ILLUSTRATED
CATALOGUE
ON APPLICATION

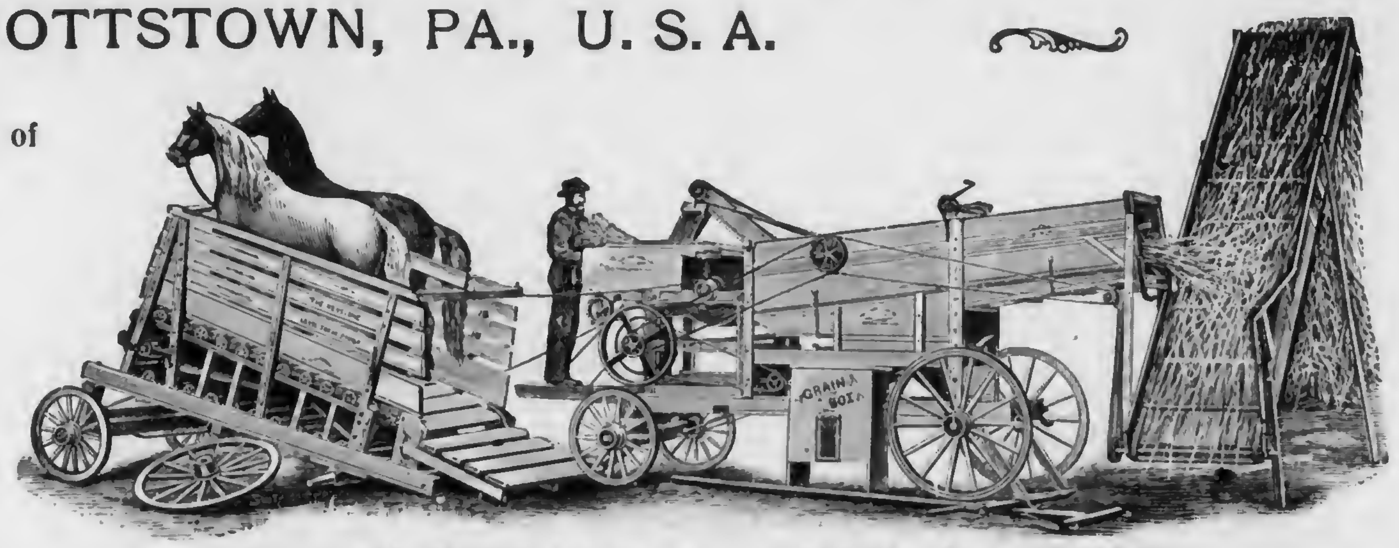
THE SUPERIOR DRILL CO., Springfield, Ohio, U. S. A.

ELLIS KEYSTONE AGRICULTURAL WORKS

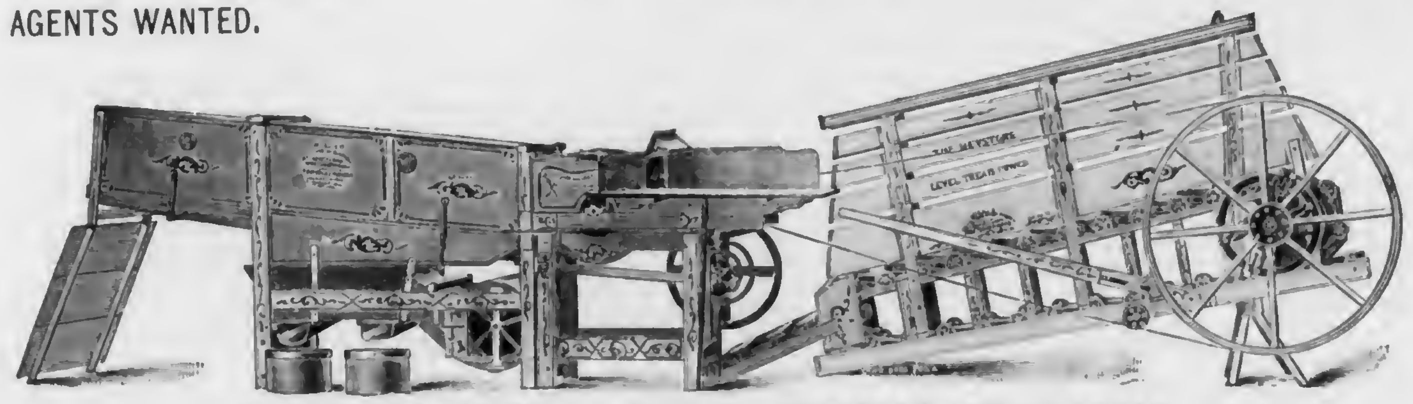
POTTSTOWN, PA., U. S. A.

Manufacturers and Exporters of
Level Tread
Horse Powers,
ALSO **Threshers and Cleaners.**

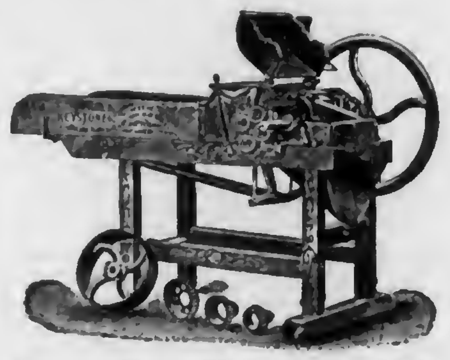
WRITE FOR CATALOGUE.
AGENTS WANTED.



TWO HORSE POWER and 28 INCH THRESHER AND CLEANER



ONE HORSE POWER and 20 INCH THRESHER AND CLEANER

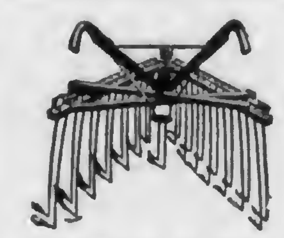


Fodder Cutters A Specialty

The Keystone Weeder and Shallow Cultivator!!

A Great Labor Saver for the Cultivation
of Sugar Beets, Trucking, etc.

20,000 of the "KEYSTONE ADJUSTABLE" WEEDERS and SHALLOW CULTIVATORS in the STATES in one Season.



Narrowed to 30 Inches.

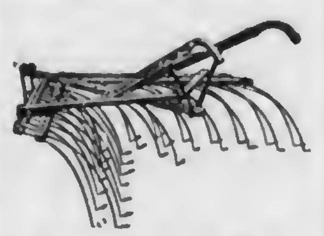
CAMDEN, DEL., U. S. A., January 16th, 1899.

Keystone Farm Machine Company, York, Pa.

DEAR SIRS:—The Keystone Weeder, that I bought of you in the Spring of 1898, saves me much money. I used in on 10 acres of corn, 16 acres of strawberries, 16 acres of red raspberries, and I am sure it saved me in labor alone last season *one hundred dollars.*

Yours truly,
C. W. LORD.

Write to us or to any of our agencies for Booklet containing more than one hundred testimonials from the best dealers. It will advise you of the numerous usages to which this great labor-saving tool is adapted.



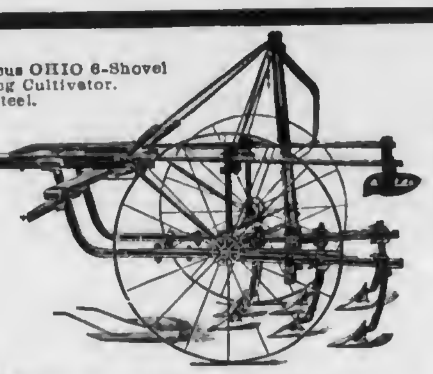
Expanded to 7½ Feet.

AGENTS: F. C. Southwell & Co., London. James S. Duncan, Paris. G. Duchamp, Brussels. Thos. I. Hunter & Son, Maybold, Scotland.

EXPORT AGENTS: C. K. Turner & Son, 76 Broad St., New York City, N. Y.

KEYSTONE FARM MACHINE CO., Limited,

YORK, PENNA., U. S. A.


Famous OHIO 6-Shovel Riding Cultivator. All Steel.

This SEAL MEANS that

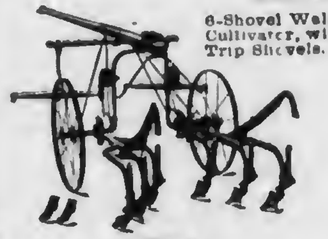
Famous OHIO

Goods are Always Best and Satisfy.

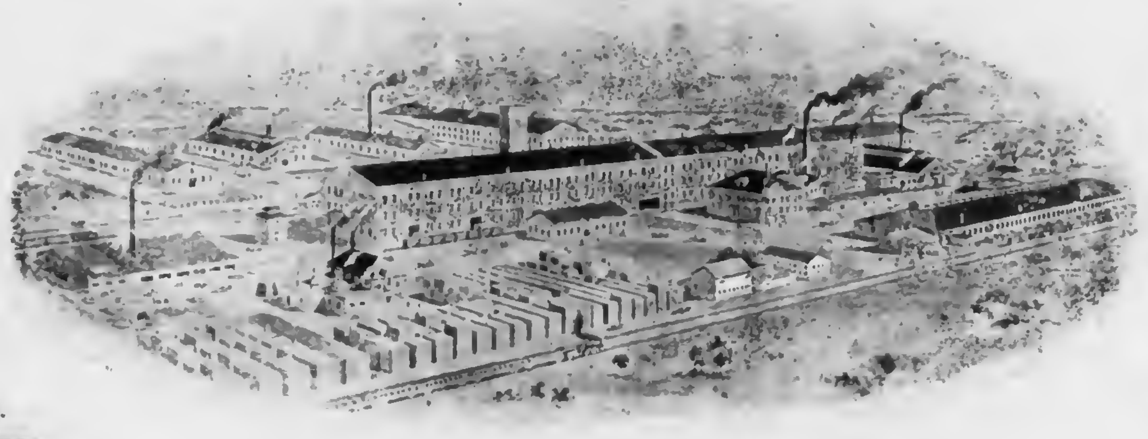
They are the Greatest Sellers in all Countries because they are made to suit the users.

Reversible and Extension Disc Harrow for Orchards and Vineyards.

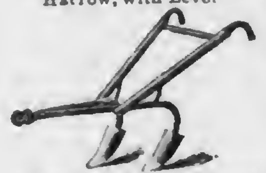
"Little Giant" 5-Tooth Cultivator, with Wheel Horse Hoes and Lever.


6-Shovel Walking Cultivator, with Spring Trip Shovels.

World-Famed Anti-Friction BELLEVUE Disc Harrow.


New Factory Covering 25 Acres of Ground.

"Little Giant" 14-Tooth Harrow, with Lever


"Victor" Steel Beam Double-Shovel Plow.

OHIO Steel Field Roller.

"Dexter" Hand Garden Cultivator.

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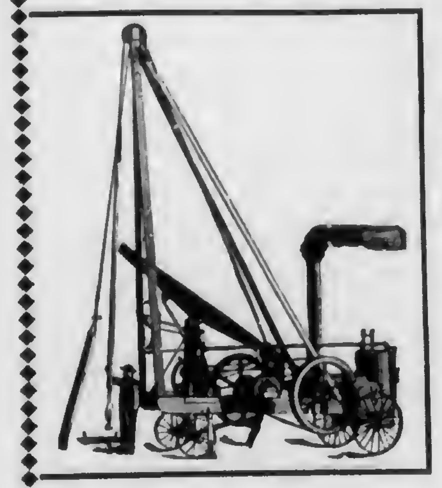

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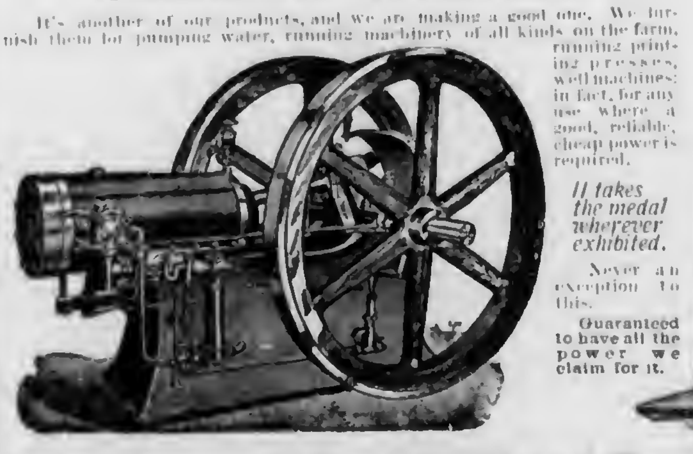

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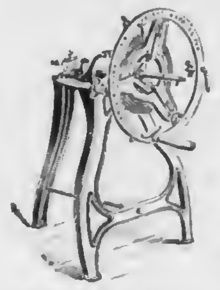
Silver's New Taper Hub Boring Machine. Hand power.

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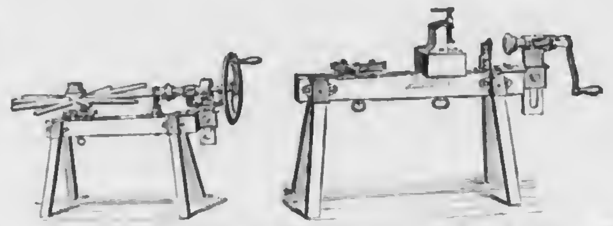
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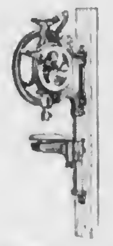
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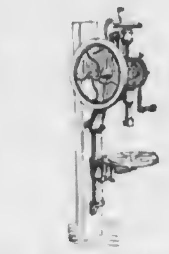
No. 12 Advance Hand Drill. Three sizes. Two speeds Self feed

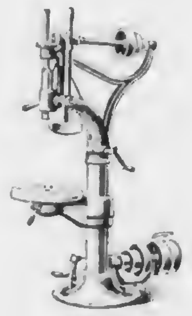
Fig. 850.
20-Inch Base Drill. Lever or screw feed. Round or square base.

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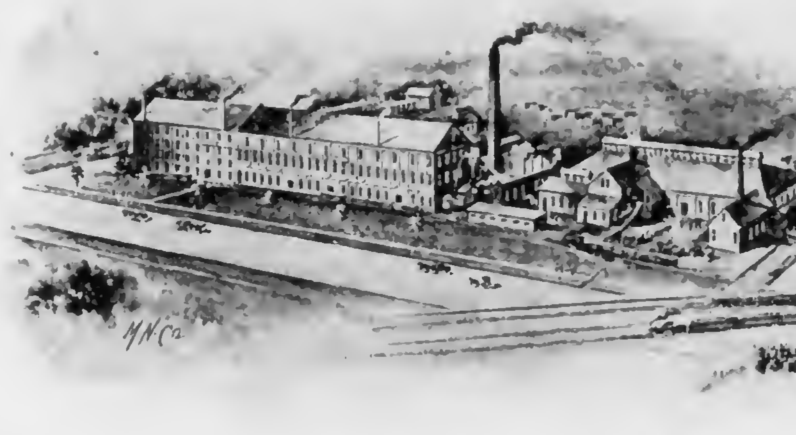
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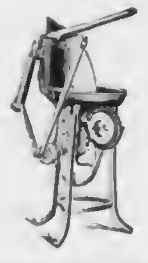
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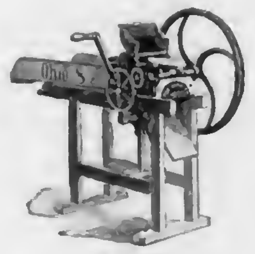

Fig. 779.
Nos. 8½ and 10½, "Ohio" Hand Feed Cutter.

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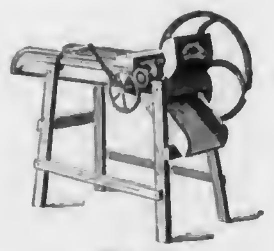
Fig. 783.
No. 11¼, "Pony" Hand Feed Cutter.

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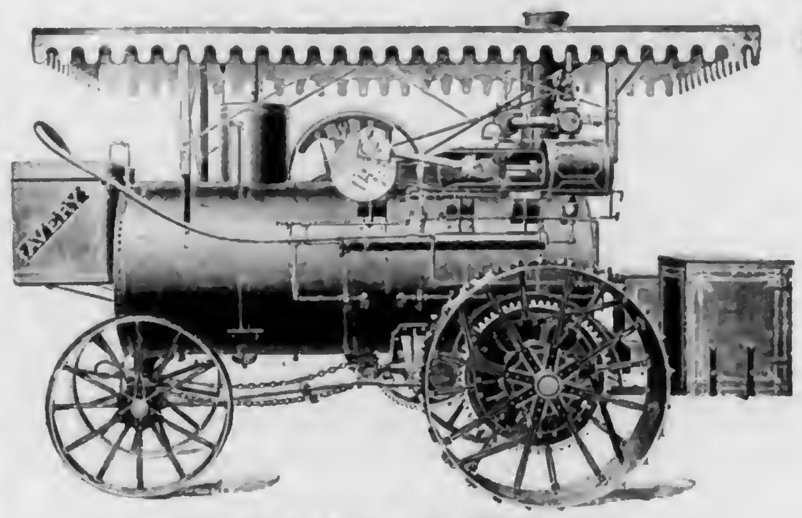

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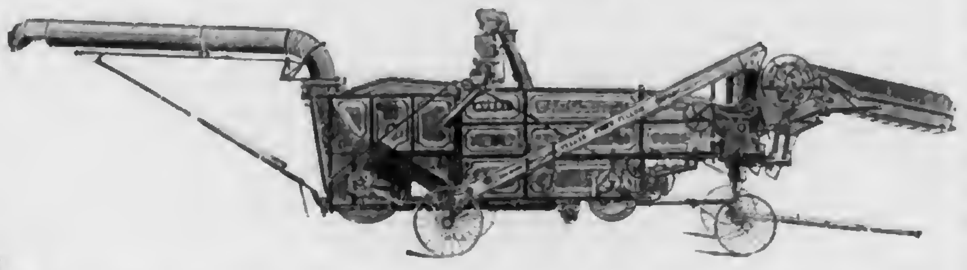
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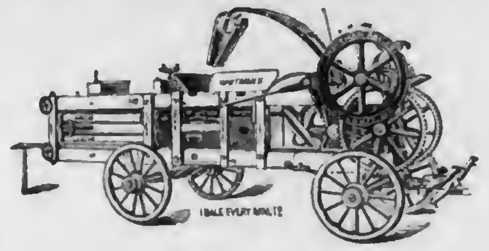

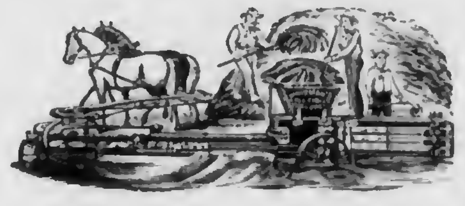

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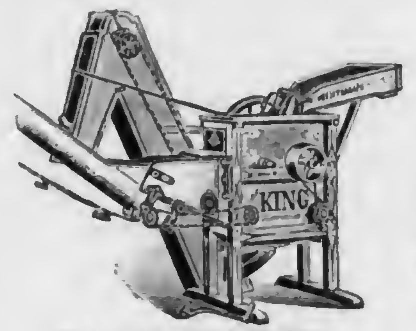
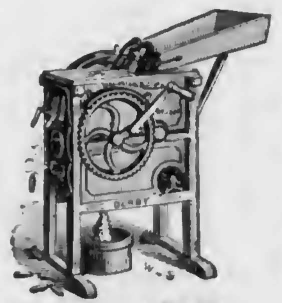
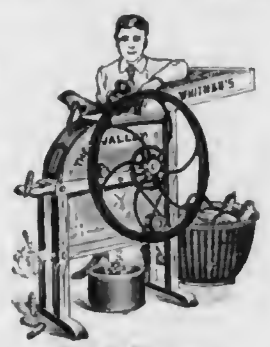


Two-hole Corn Sheller.



Derby Corn Sheller.



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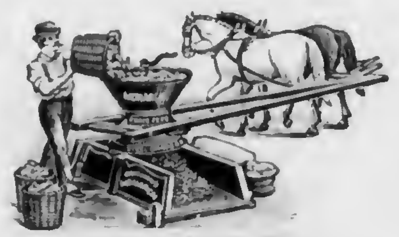
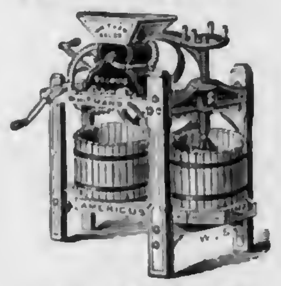


Corn and Cob Mill.



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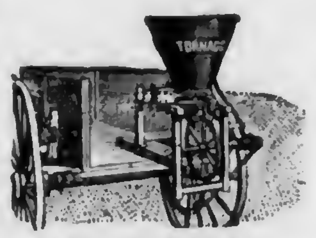

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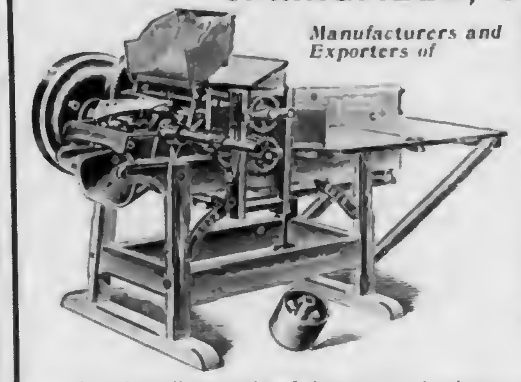

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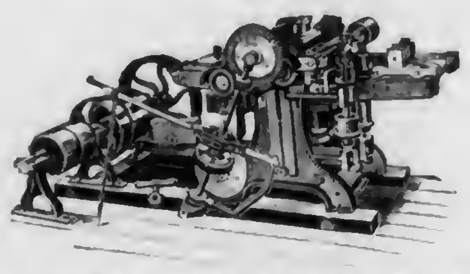

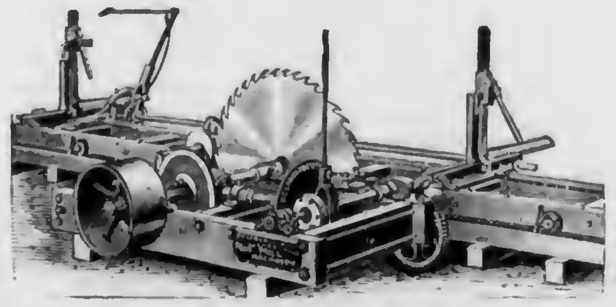

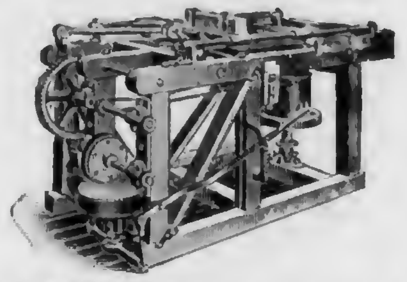

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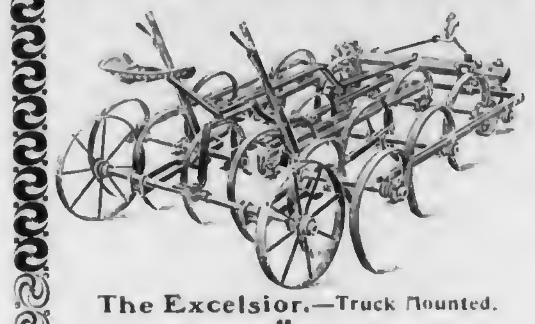
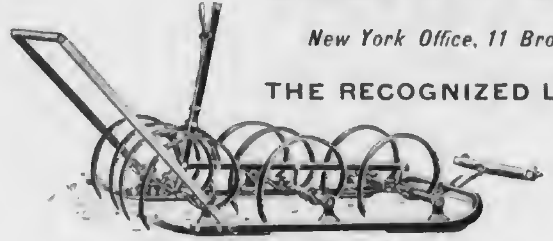
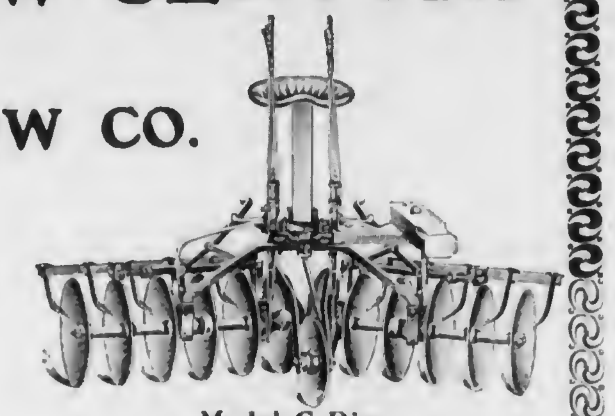


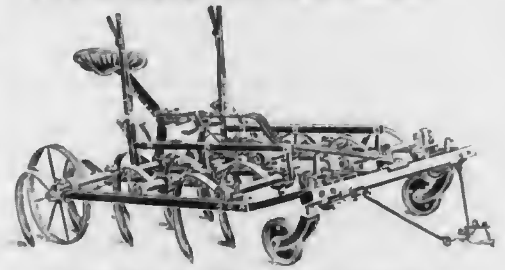
The Excelsior.—Truck Mounted.



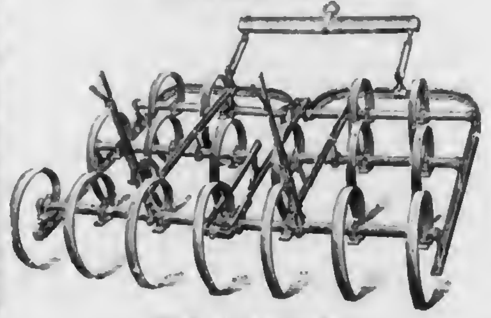
One-Horse Badger.



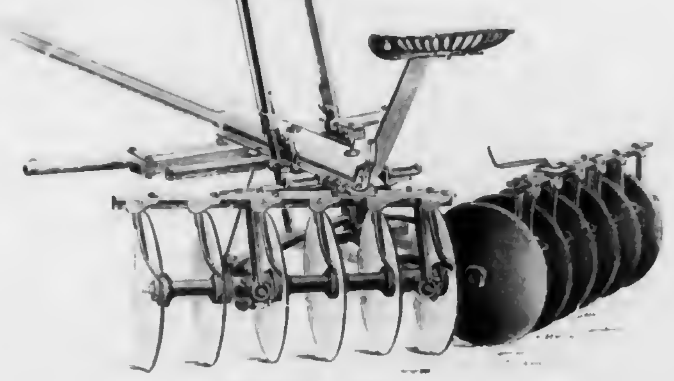
Model C Disc.



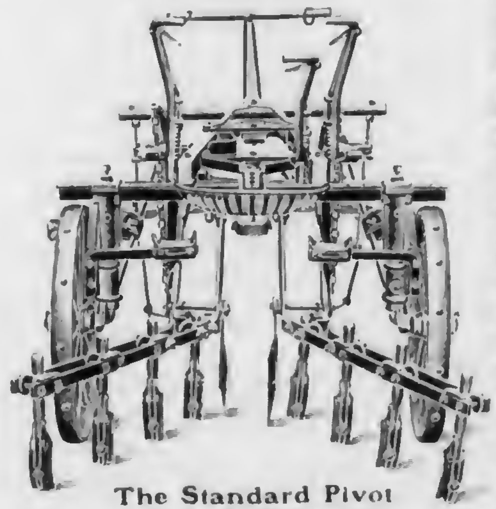
The Monarch.—Truck Mounted. Extra High Frame.



The Aberdeen.



Model B Disc.



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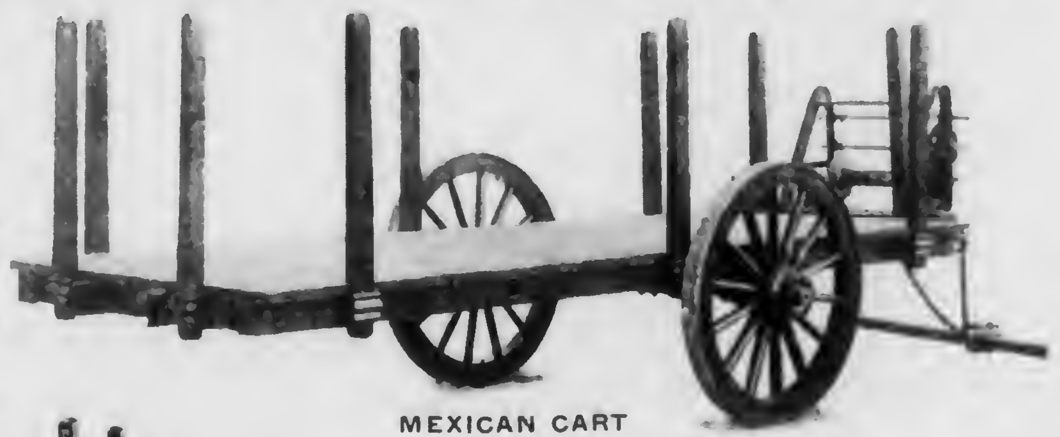

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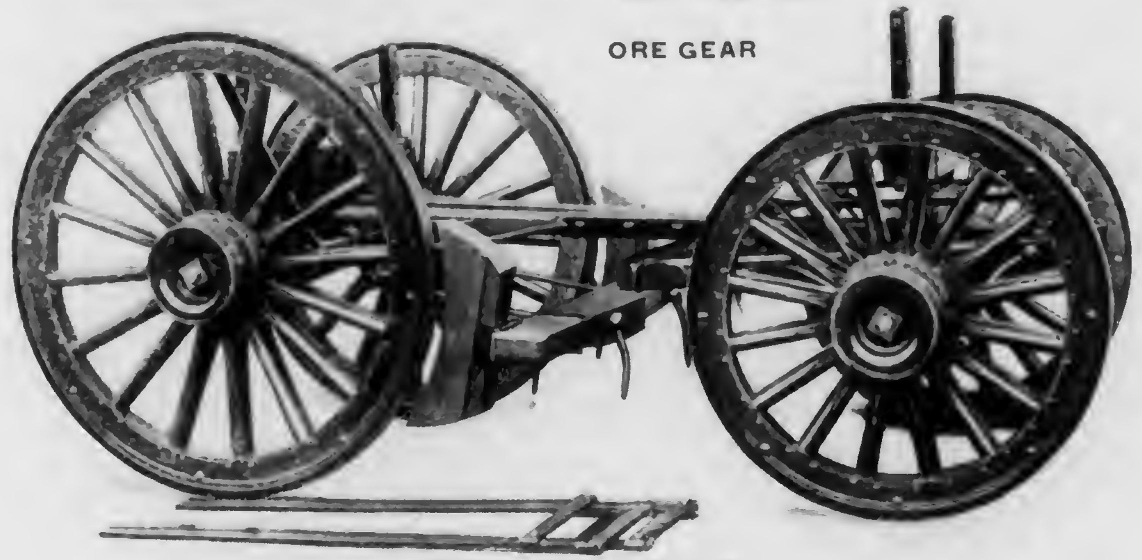

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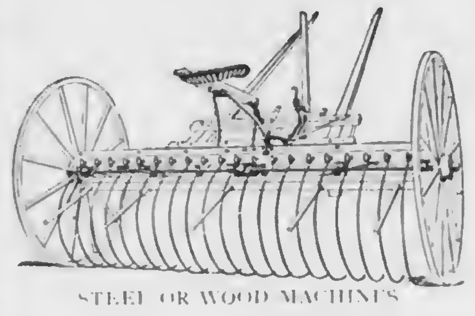

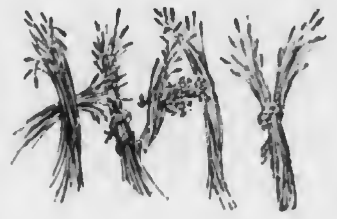

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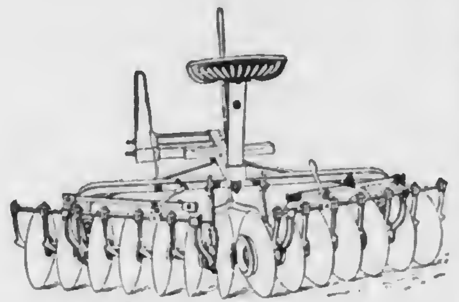

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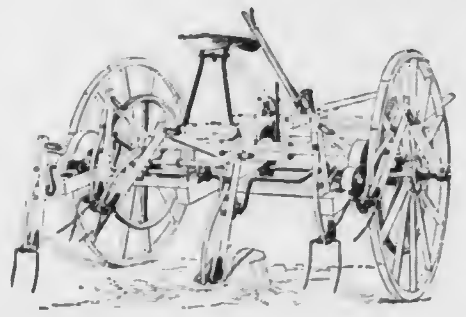

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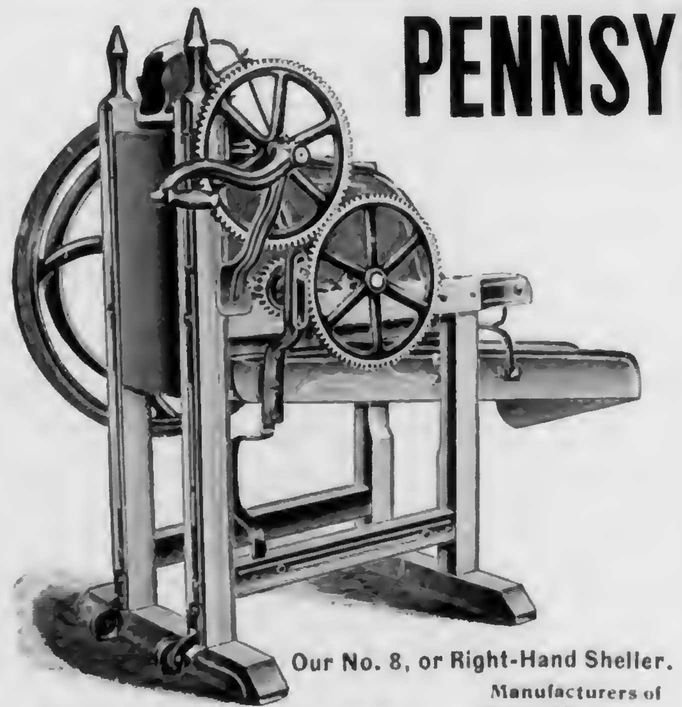

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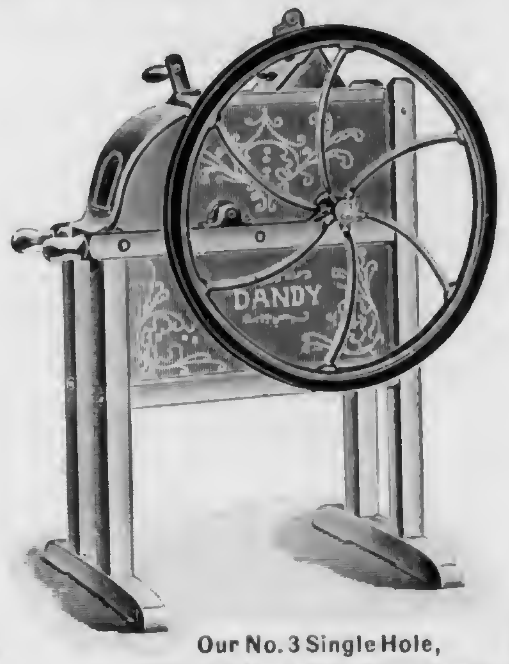

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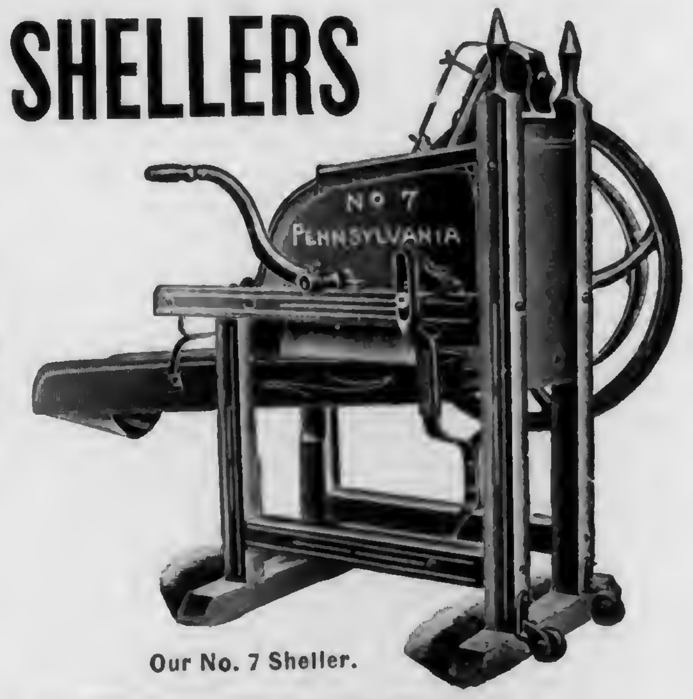

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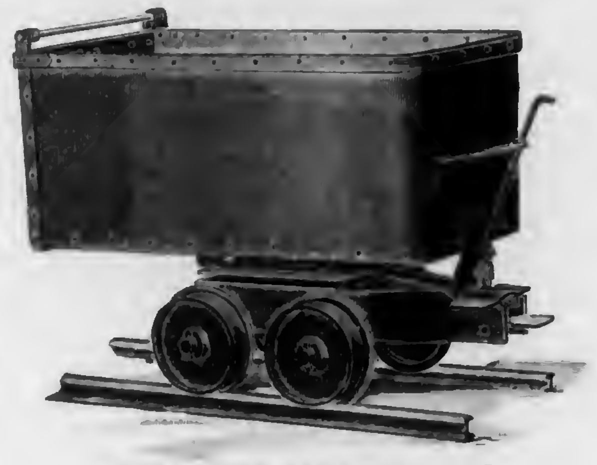

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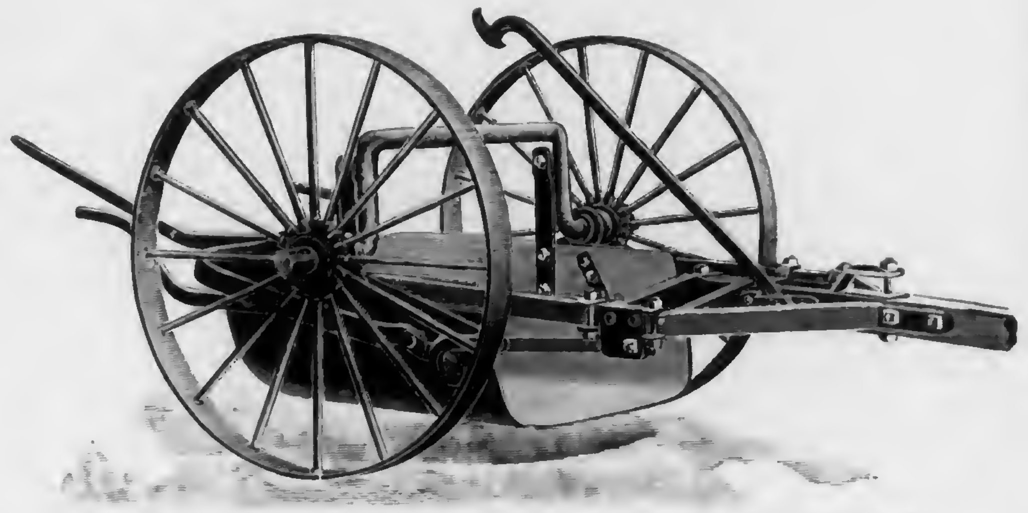

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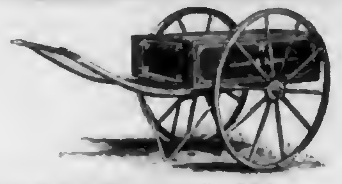
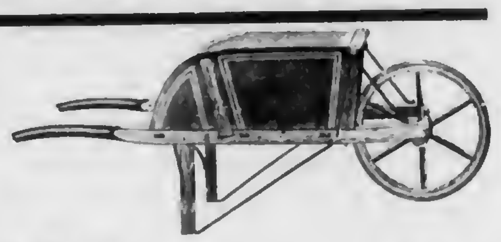

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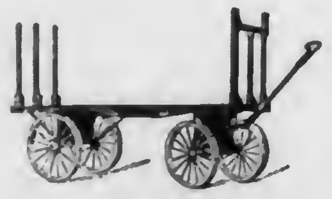

Lansing Wheelbarrow Co., Lansing, Mich.
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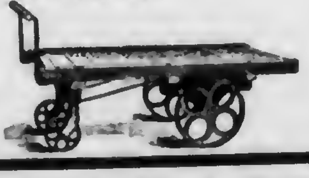
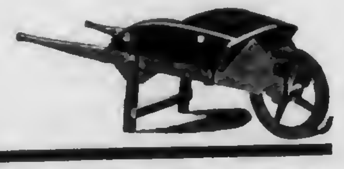

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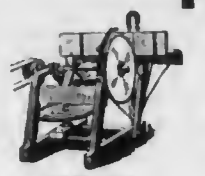
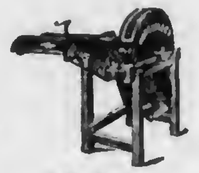
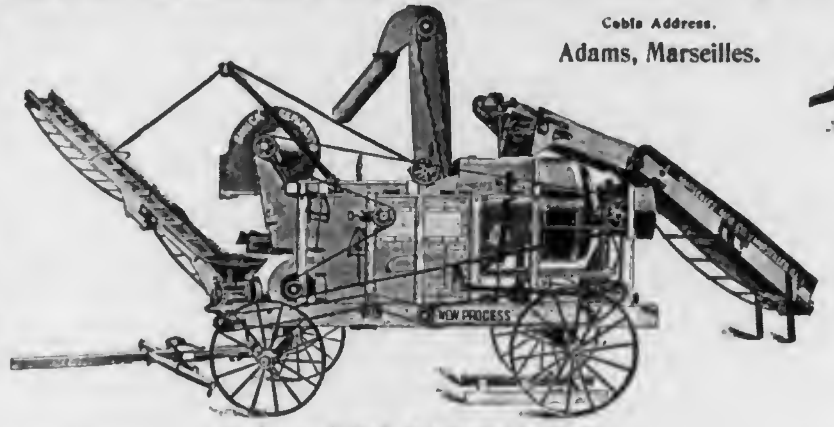
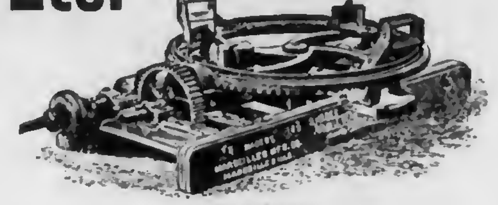
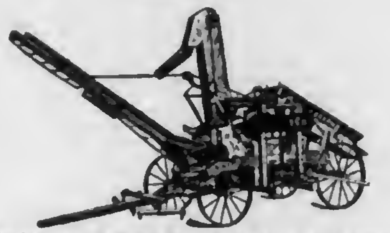

Wood Saws.

Speed Jacks.


Feed Cutters.


New Process Cylinder Corn Shellers for Engines.


Horse-Powers.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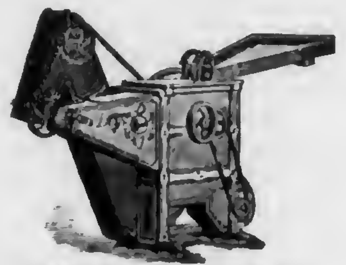
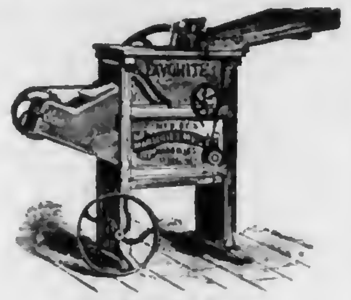

Two-Hole Shellers for Horse-Powers.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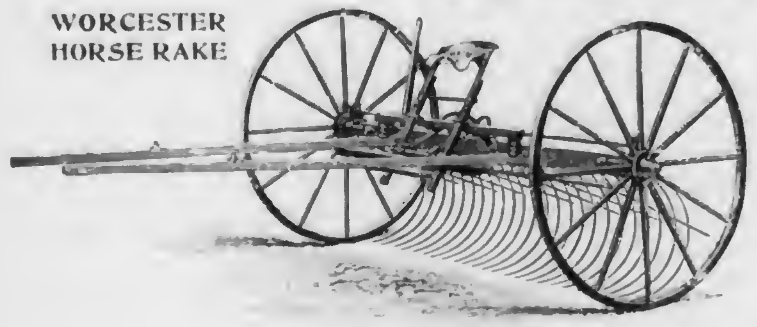

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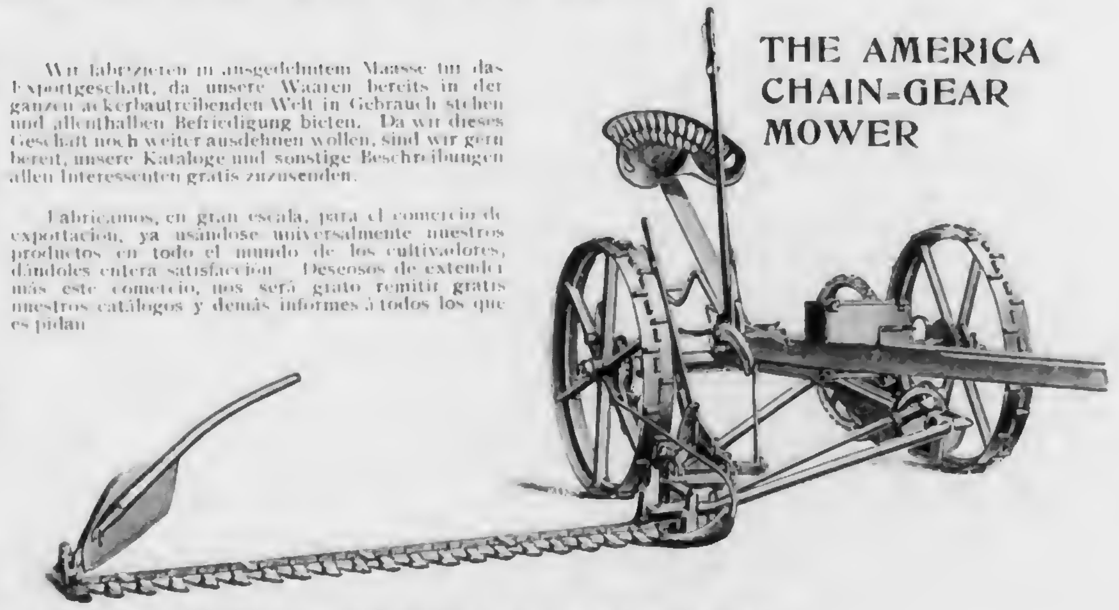

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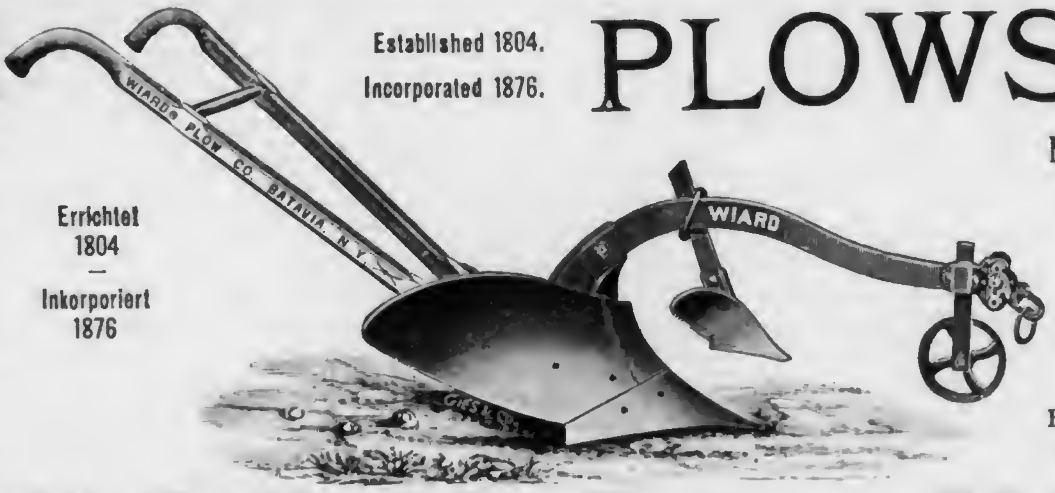

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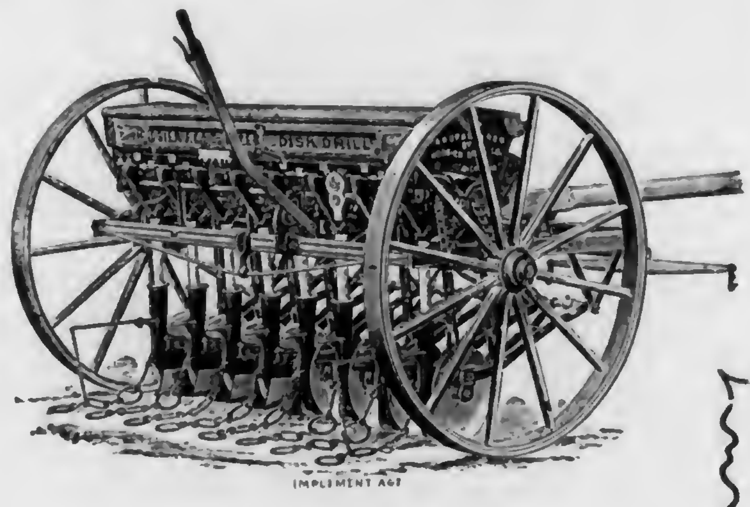

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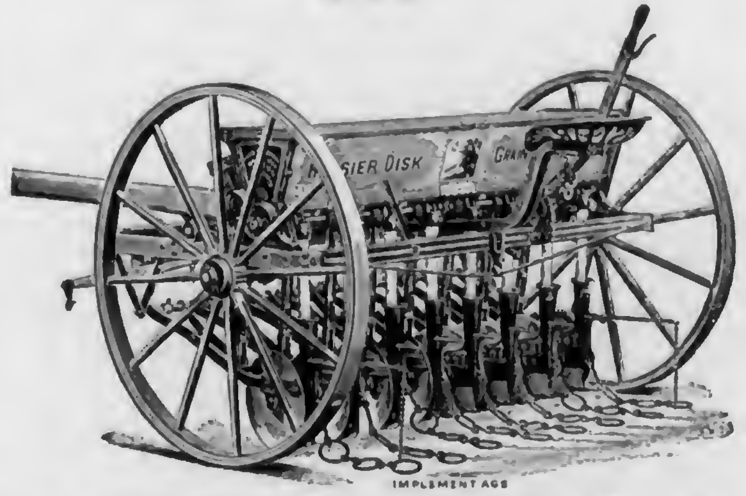

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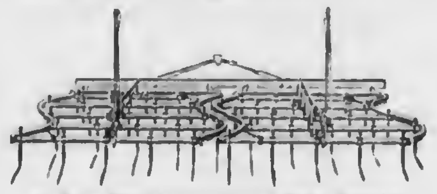
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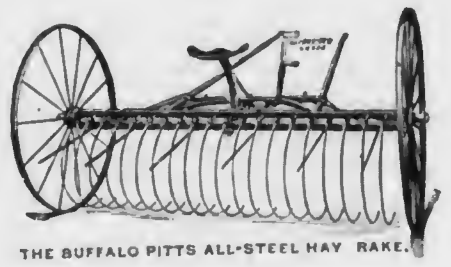
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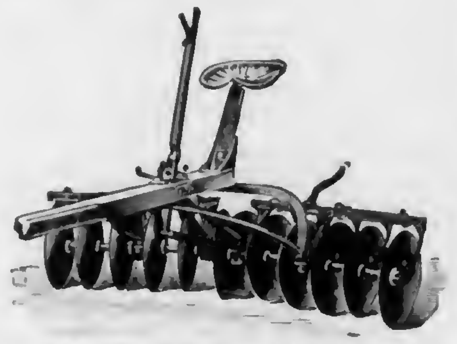
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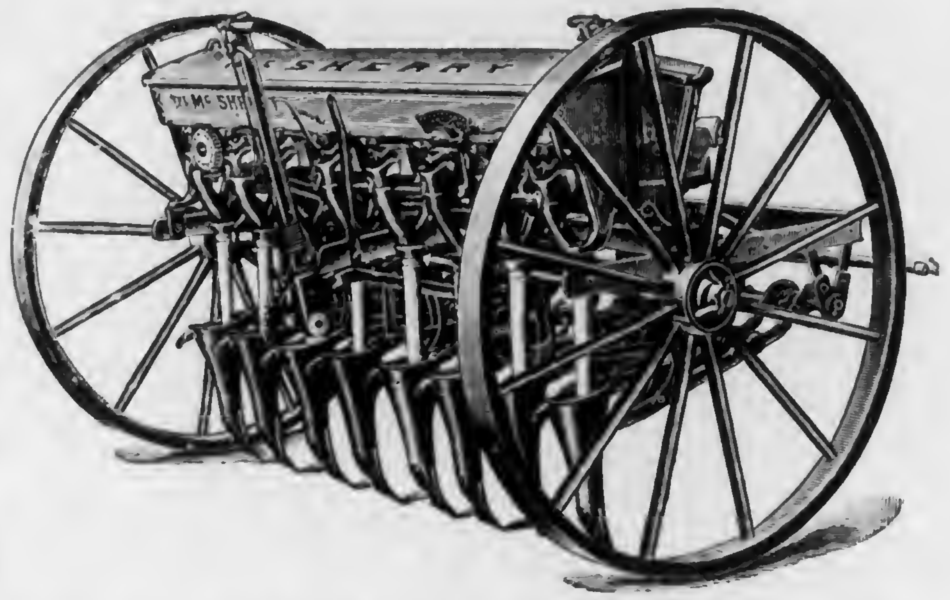

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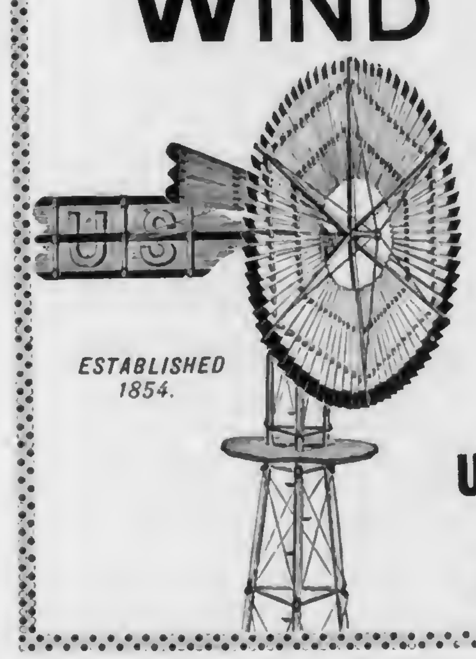

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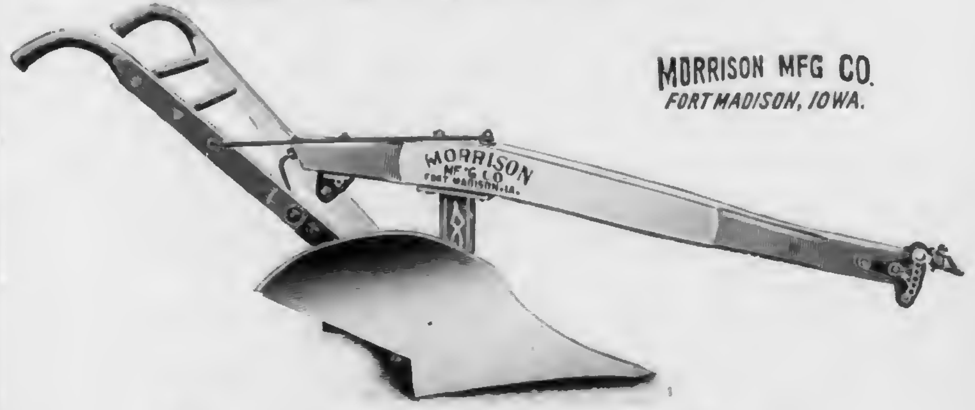
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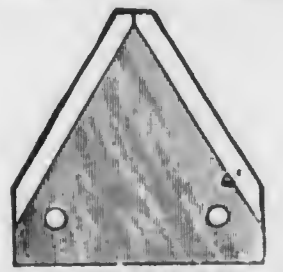
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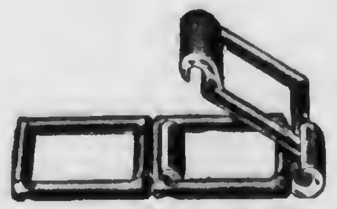
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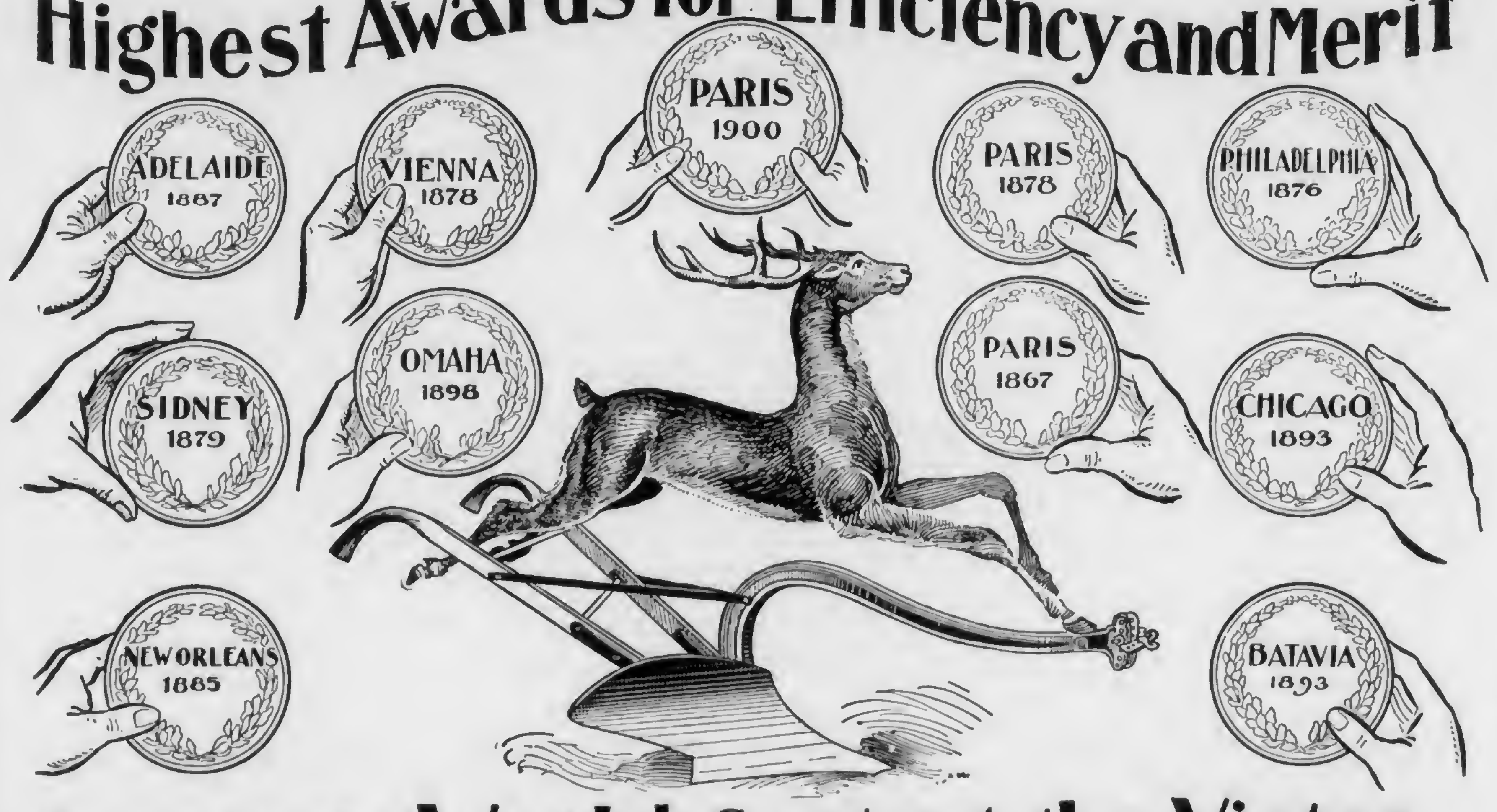

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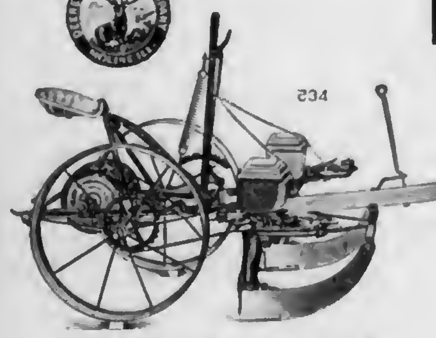

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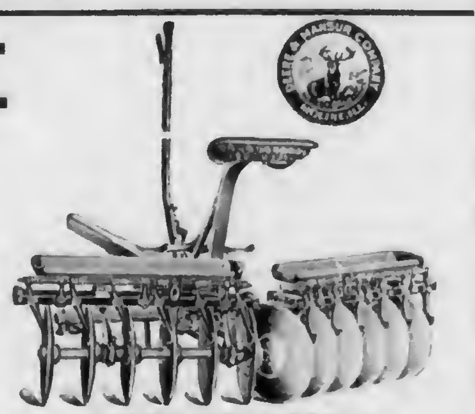

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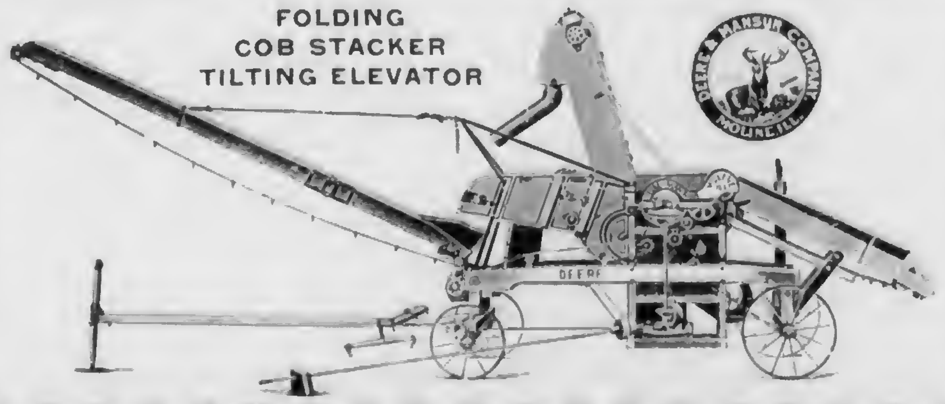

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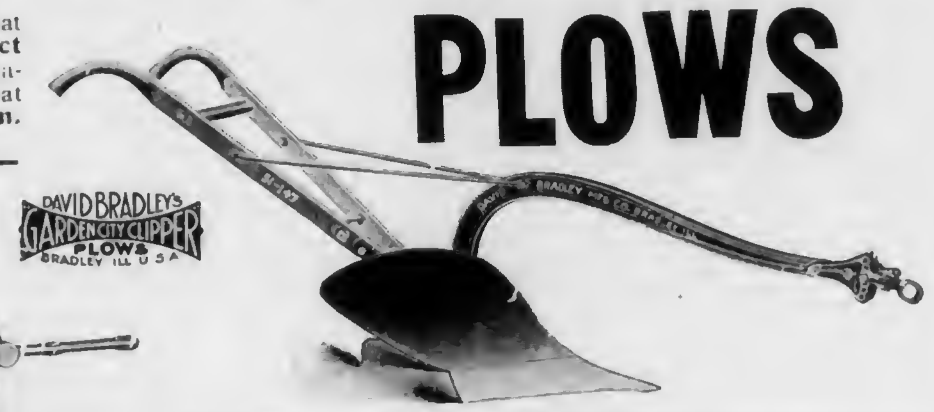

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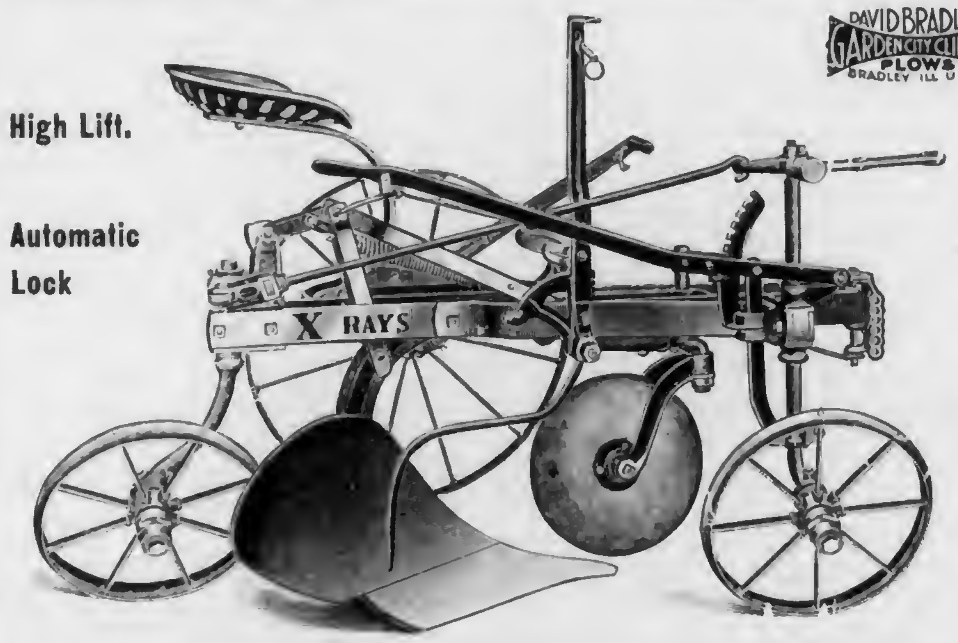

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Have a powerful **lifting spring.** A boy can handle them easily.
A patented stop carries the Plow on the frame and lightens draft.
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"Garden City Clipper" bottoms are put on these Plows.
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NOTHING TO GET OUT OF ORDER.

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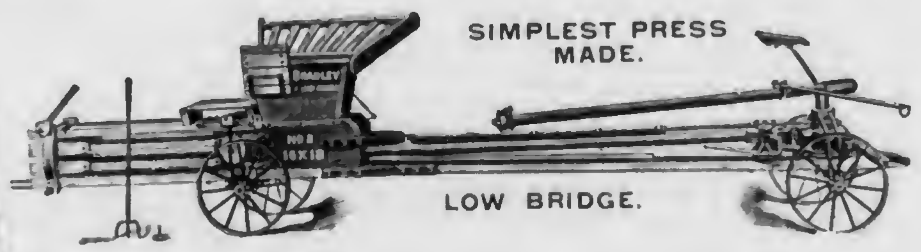

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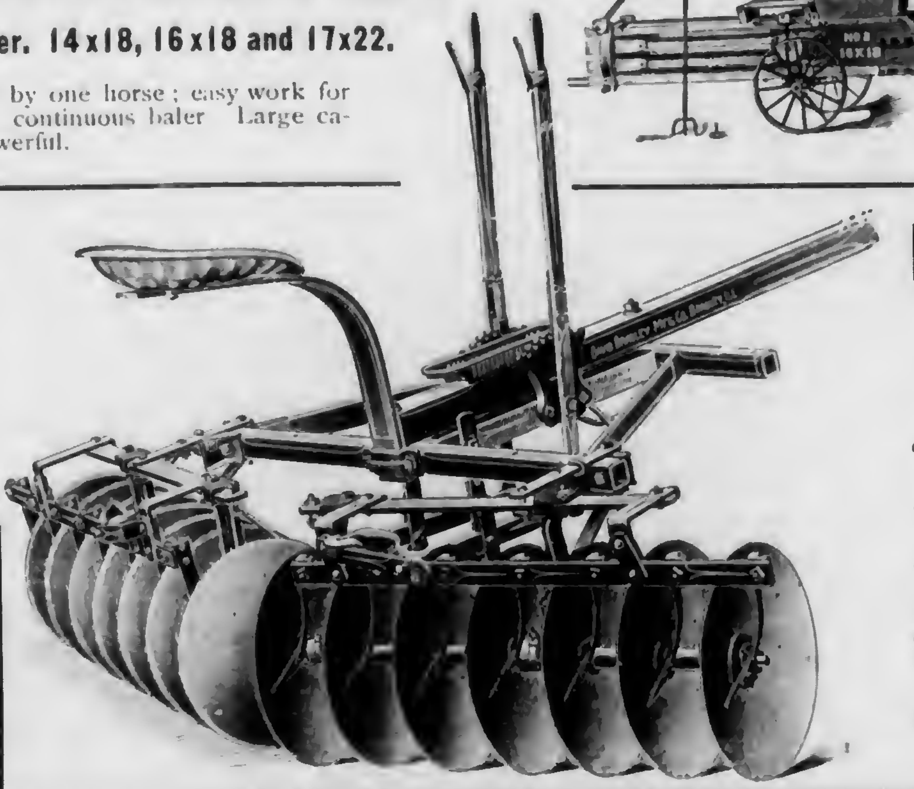

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Boxes are separate, and can be quickly and cheaply renewed.

Scrapers have spring-steel shanks.

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Equalizer and neck-yoke go with each harrow.

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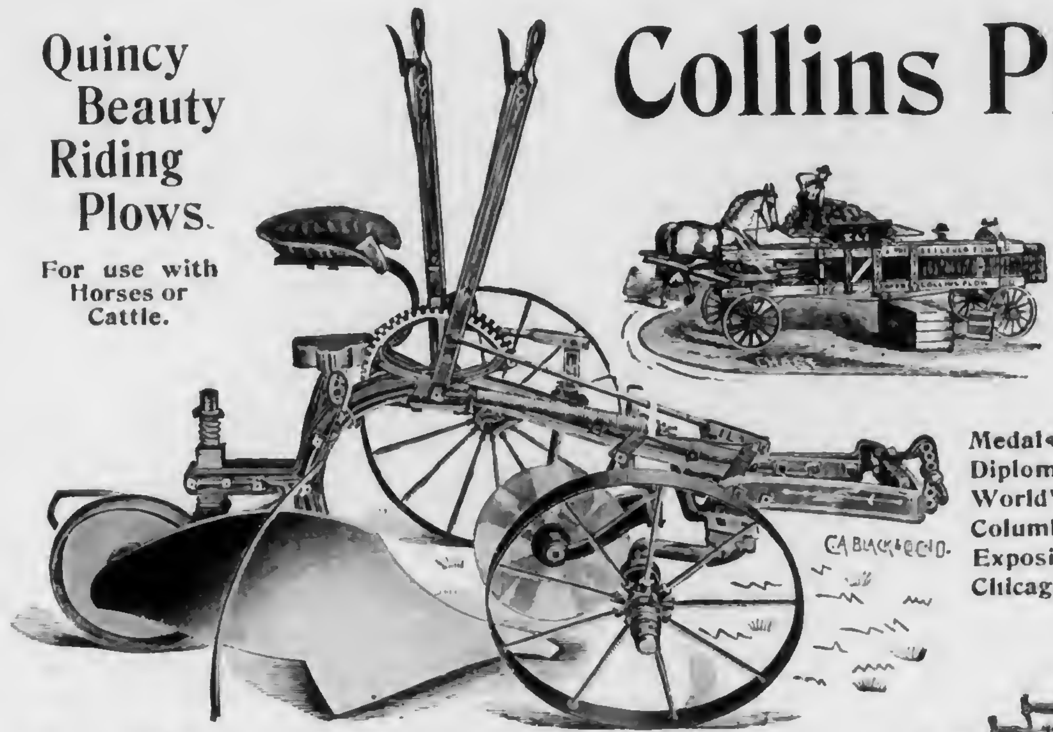
Quincy Beauty Riding Plows.

For use with Horses or Cattle.



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will pulverize any soil.

Teeth may be used at any slant.

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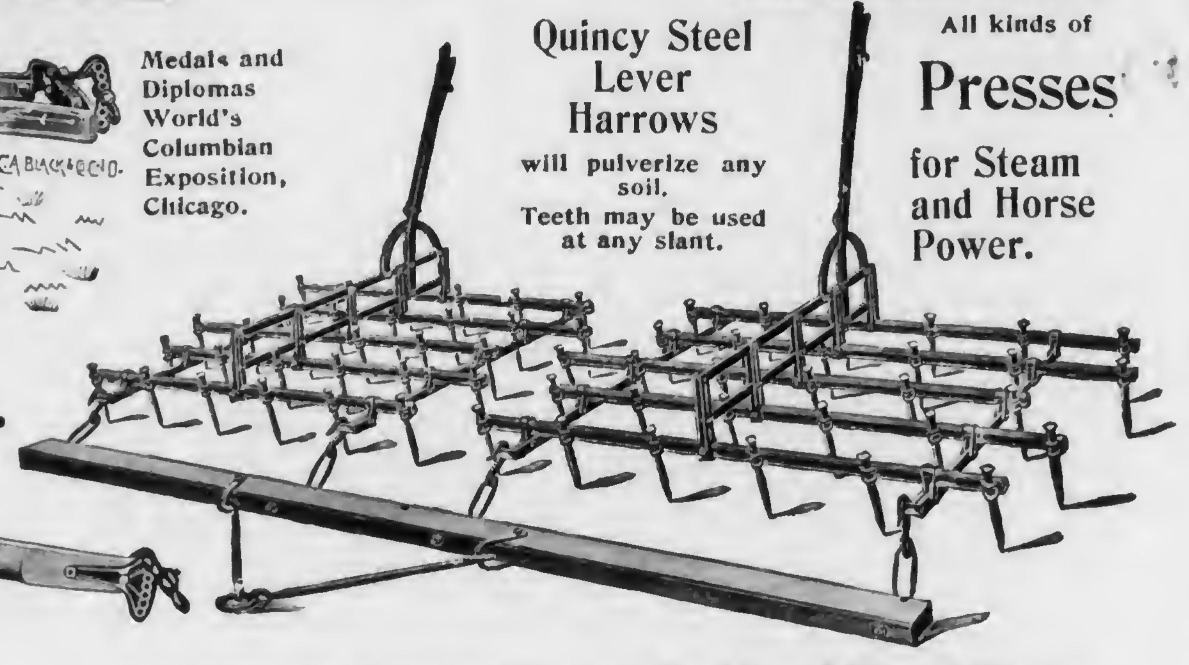

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Collins' Hardened Steel **Plows** are the BEST.

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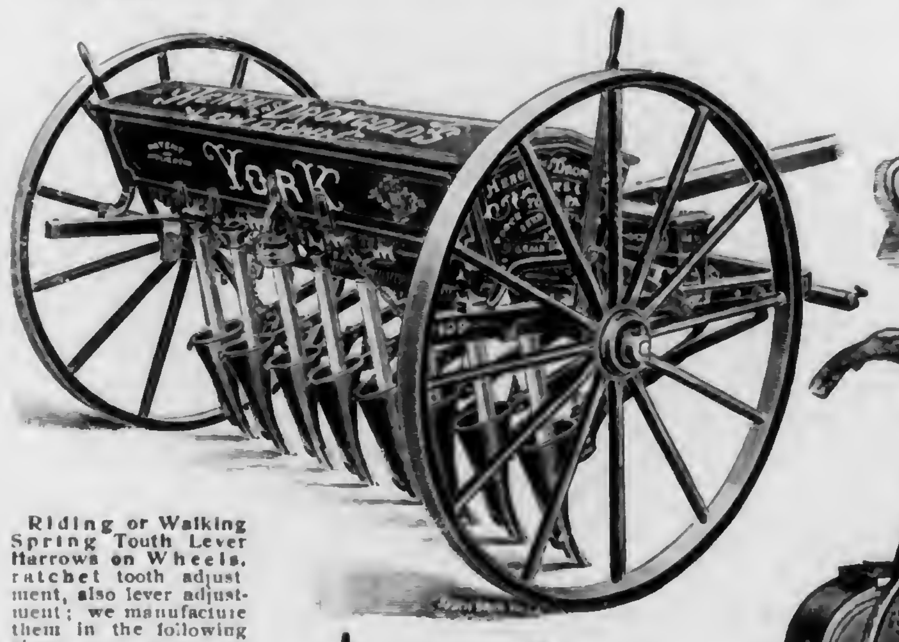

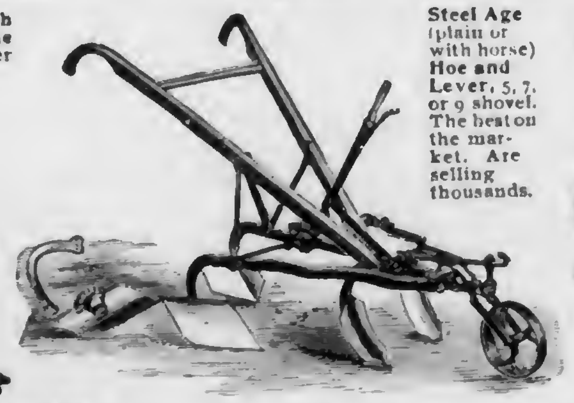

Steel Age (plain or with horse) **Hoe and Lever**, 5, 7, or 9 shovel. The best on the market. Are selling thousands.

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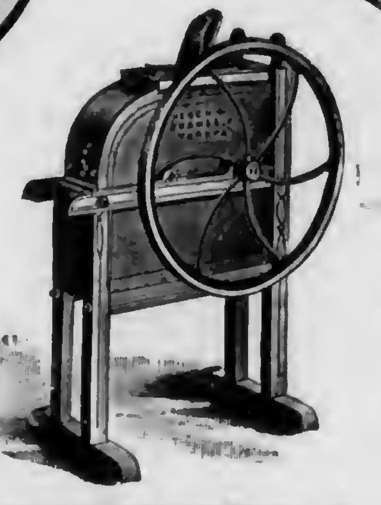

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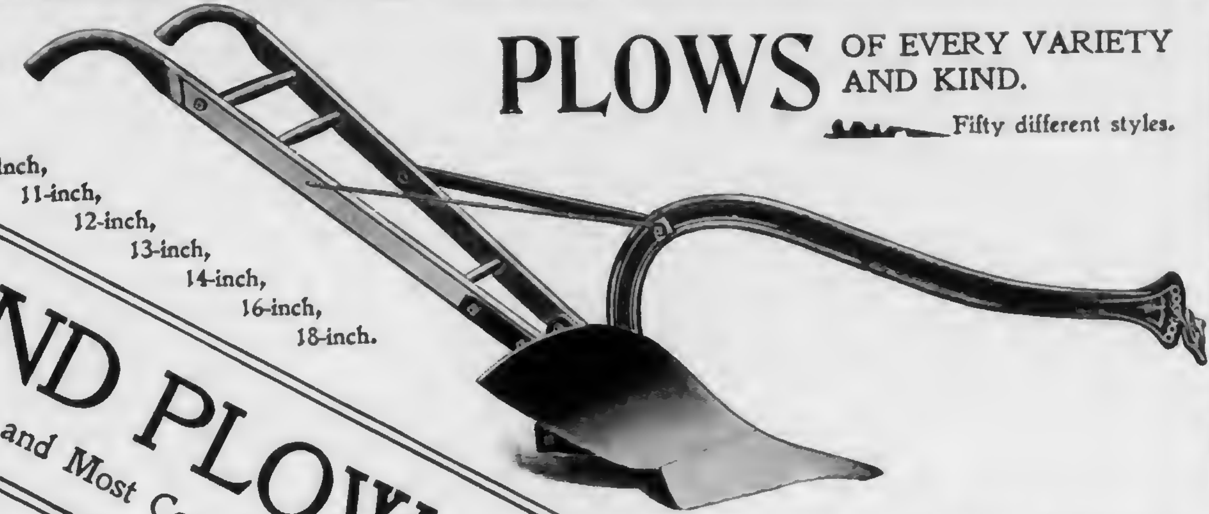

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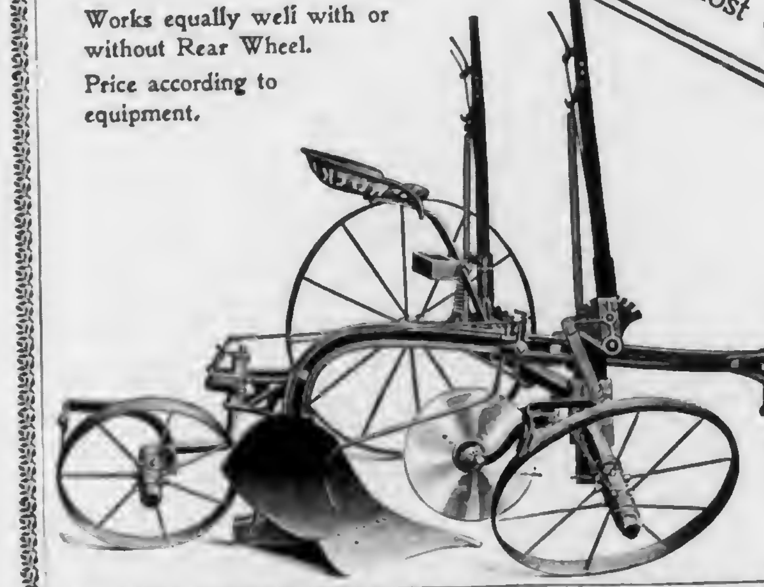
Works equally well with or without Rear Wheel.

Price according to equipment.



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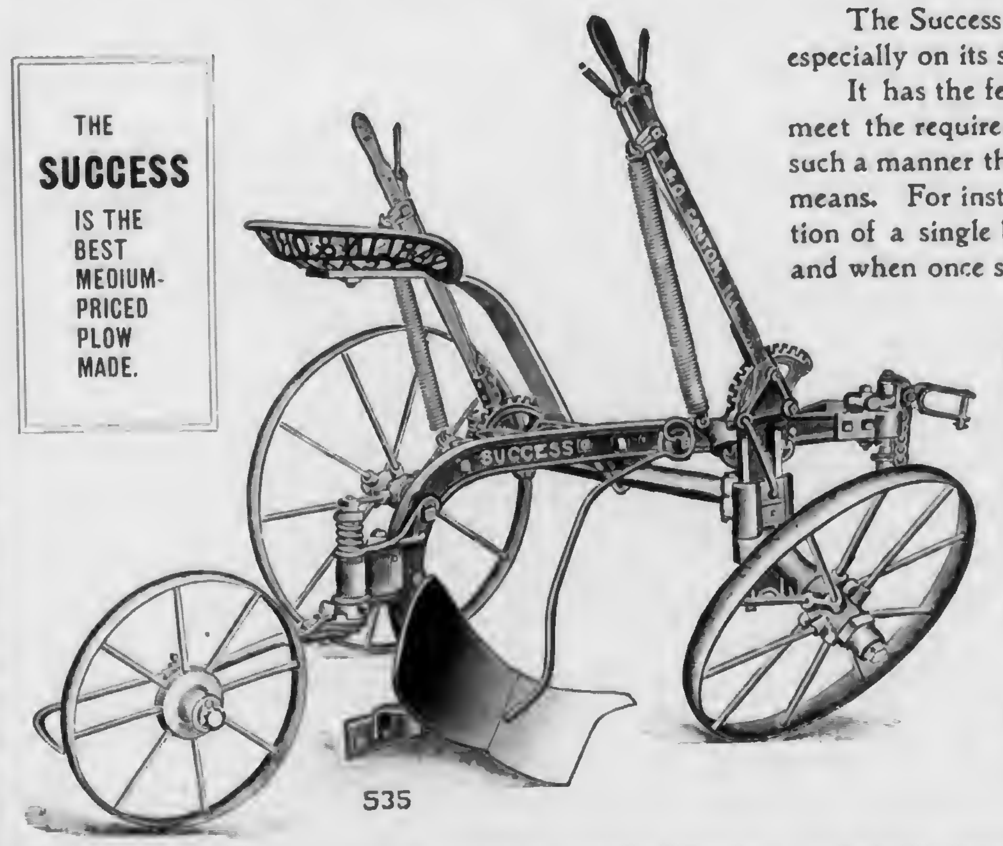

The Success Plow bases its popularity on a number of good features, especially on its simplicity of construction and its ease of operation.

It has the fewest possible parts necessary for a plow which is made to meet the requirements in all kinds of soil, and those few parts are made in such a manner that any adjustment necessary can be secured by the simplest means. For instance, the land friction can be overcome by the manipulation of a single bolt. The lock on the rear wheel is perfectly automatic, and when once set requires no further attention from the driver.

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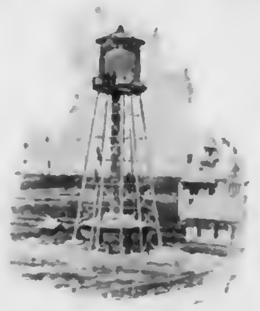

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Force Pump with Brass Bibb Cock in Spout

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Power Mill Outfit

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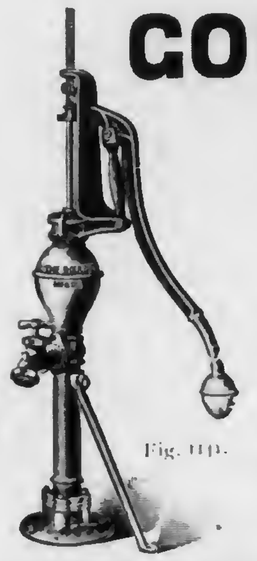

Fig. 119.

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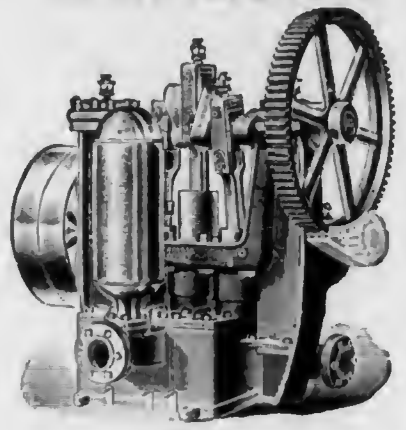
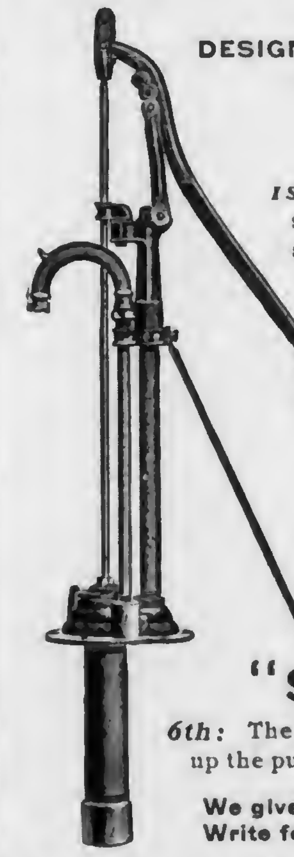


Fig. 921

Red Jacket Force Pump



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"SO EASY TO FIX"

6th: The valves can be taken up and fixed without taking up the pump or getting down in the well.

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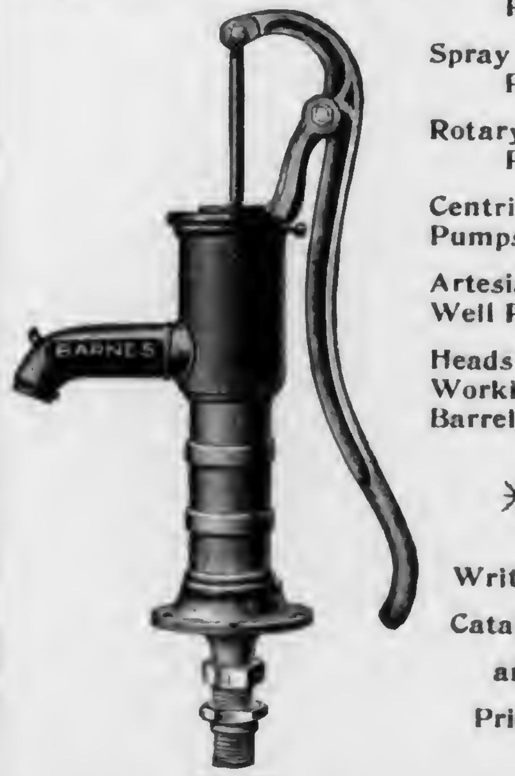

Fig. 107

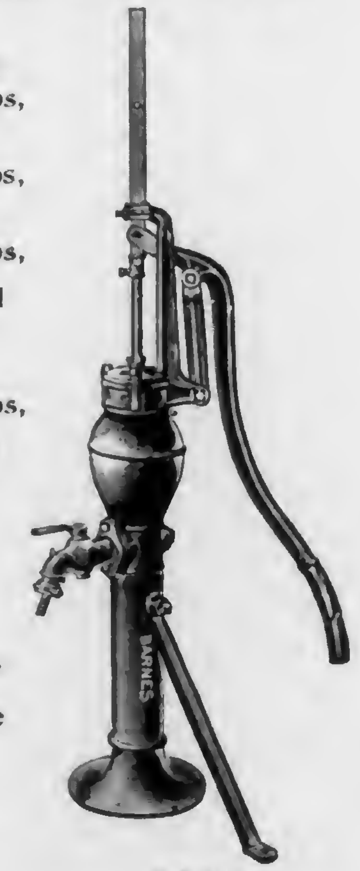

Fig. 551

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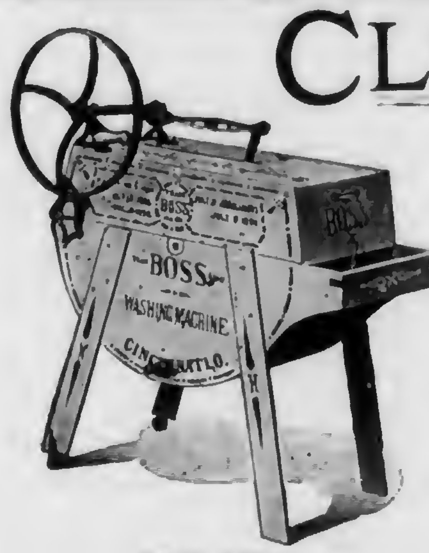

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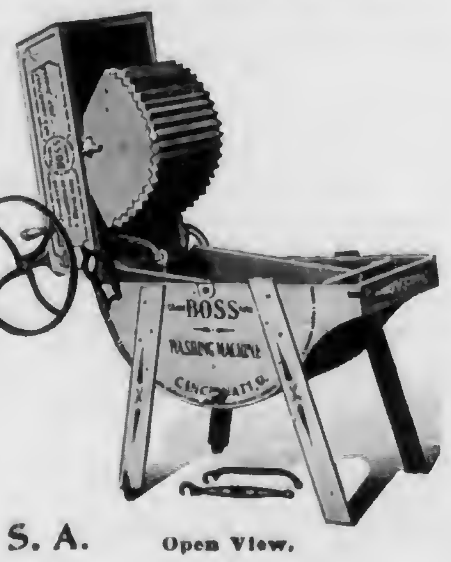

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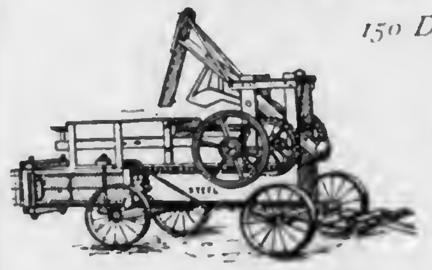

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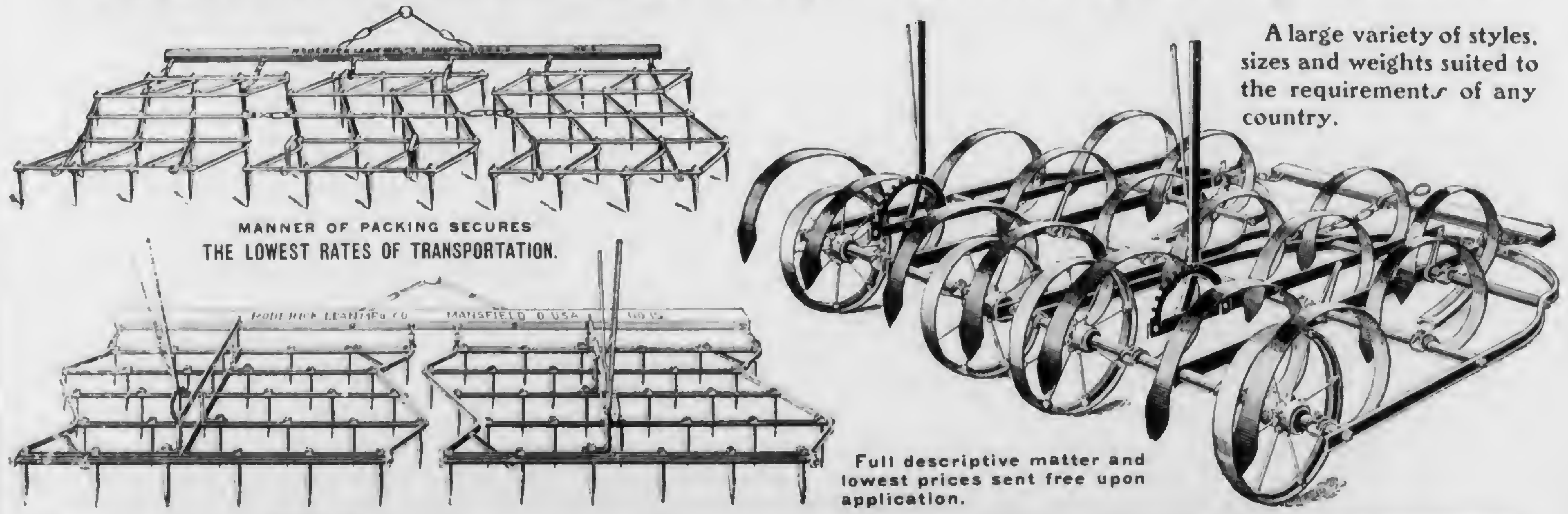
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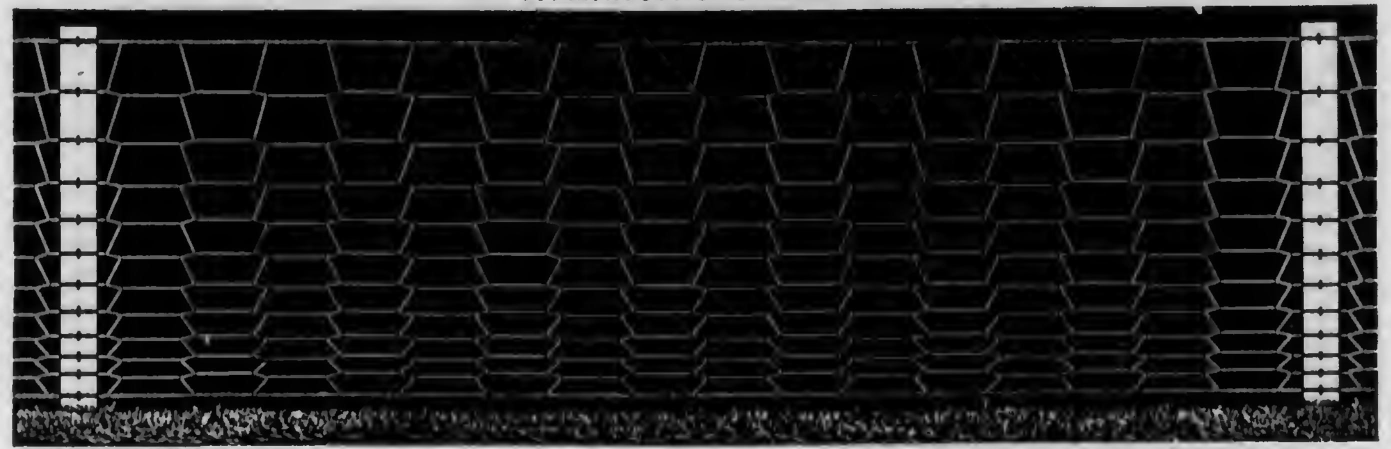

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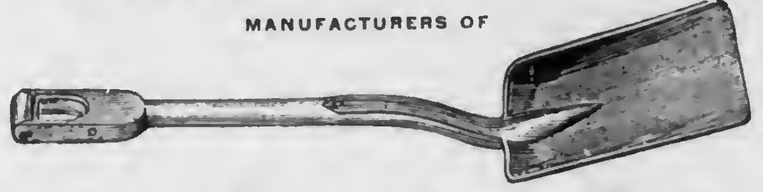

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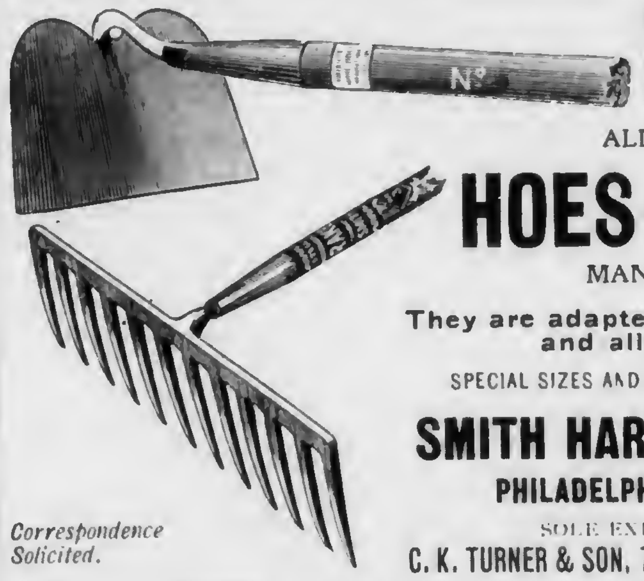

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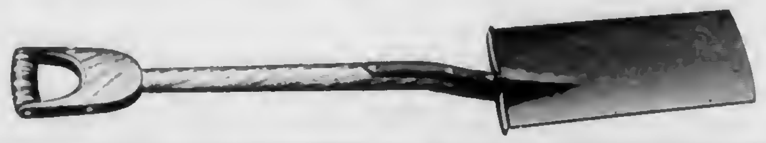

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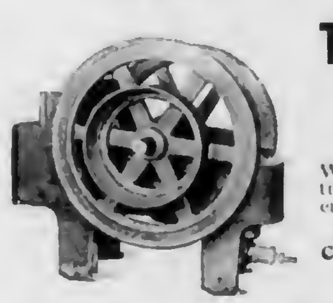

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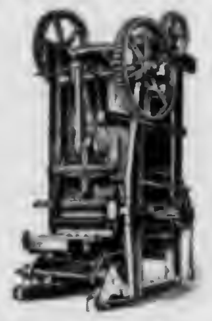

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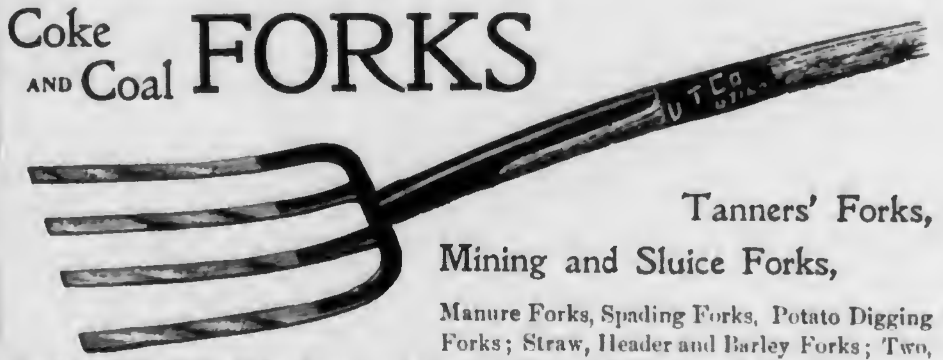

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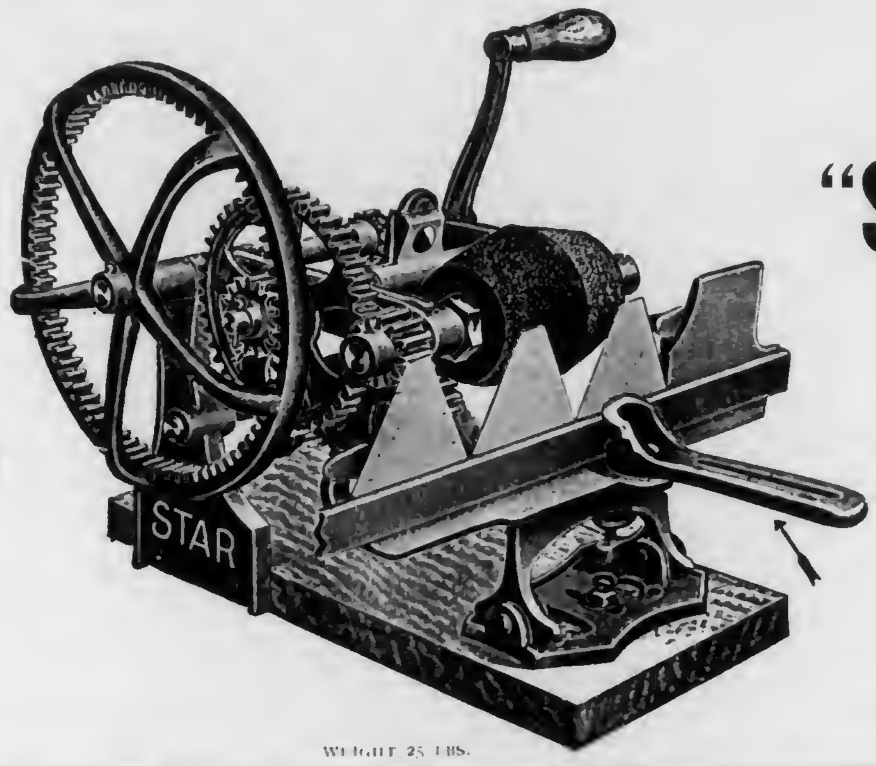

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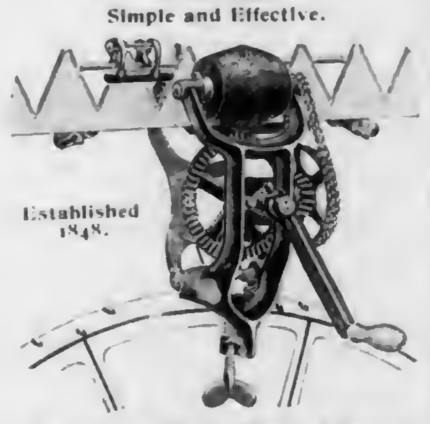

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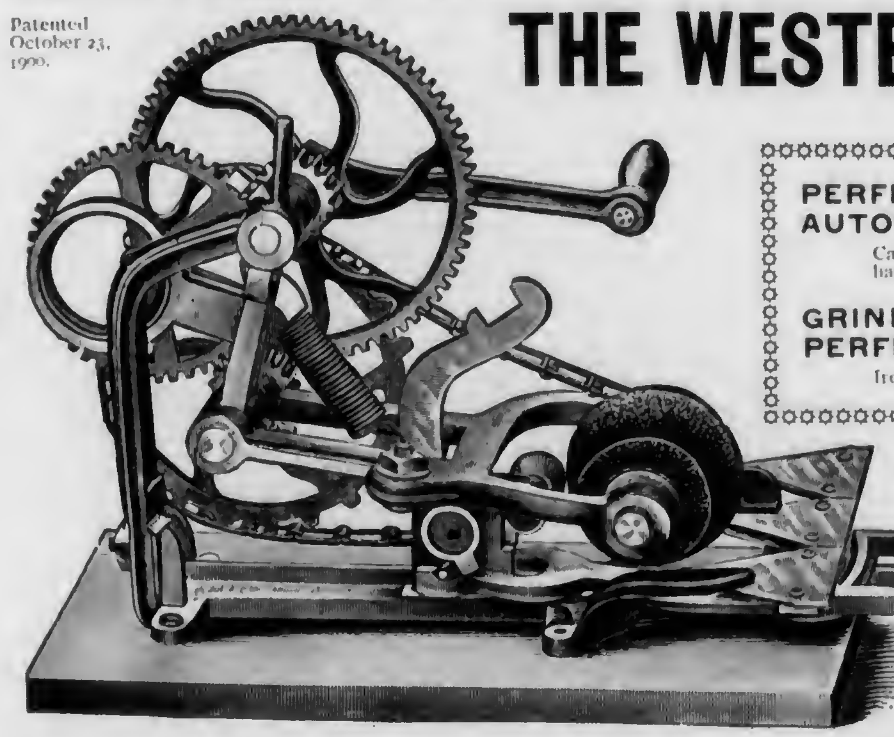

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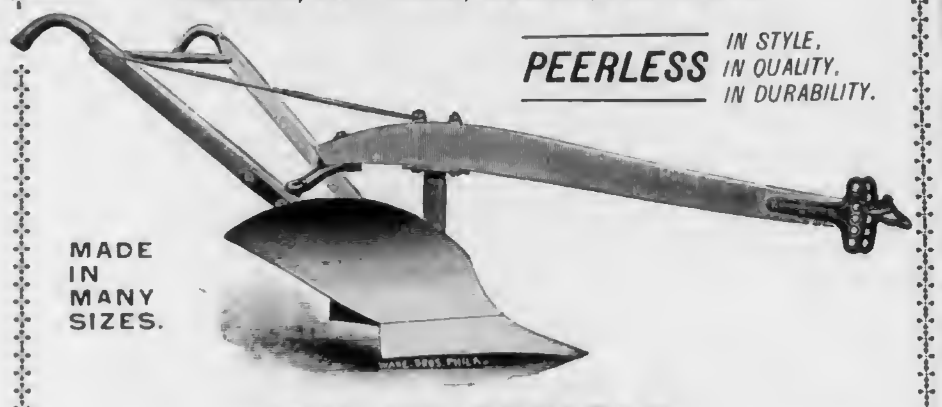
Makers of WALKING PLOWS, SULKY AND GANG PLOWS, HARROWS, CULTIVATORS, SEED SOWERS, HAY PRESSES, HAY TOOLS, WAGONS, CARTS, ETC.



PEERLESS IN STYLE, IN QUALITY, IN DURABILITY.

MADE IN MANY SIZES.

THE CELEBRATED

PEERLESS SINGLE PLOWS,

STEEL AND CHILLED.

The result of thirty years' experience in building plows to suit the many soils found on the Pacific coast.

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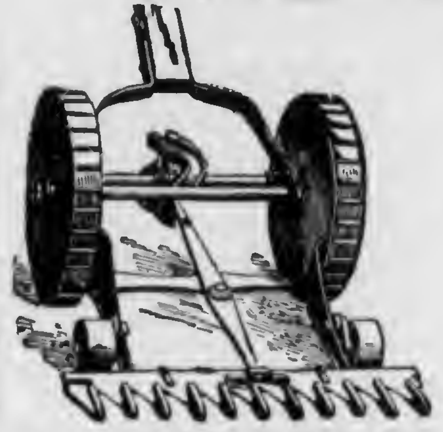

THAT WILL

KILL ALL THE WEEDS IN YOUR LAWNS.

If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear.

THE CLIPPER WILL DO IT.

CLIPPER LAWN MOWER CO., Norristown, Pa., U. S. A.

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Manufacturers of

Peerless Threshing Machines,
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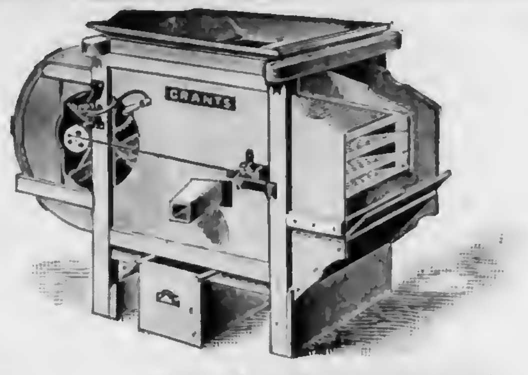
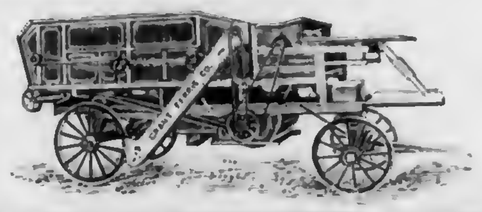
STRAIGHT STRAW RYE Threshers.





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Largest and Oldest Builders of Fanning Mills in the World.

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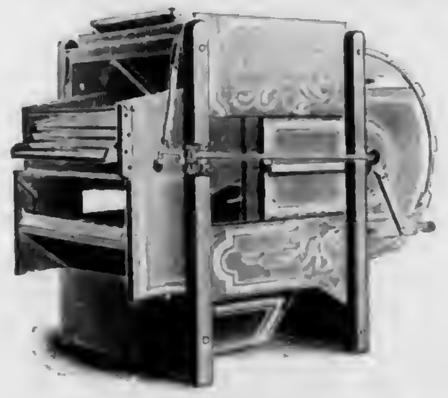

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ESTABLISHED 1858.

C. H. MICHAEL, Manufacturer of Fanning Mills exclusively.

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Size: 27 inches wide, 48 inches long and 48 inches high.

Knocked down and boxed with matched lumber for export, occupying a space of thirty cubic feet.

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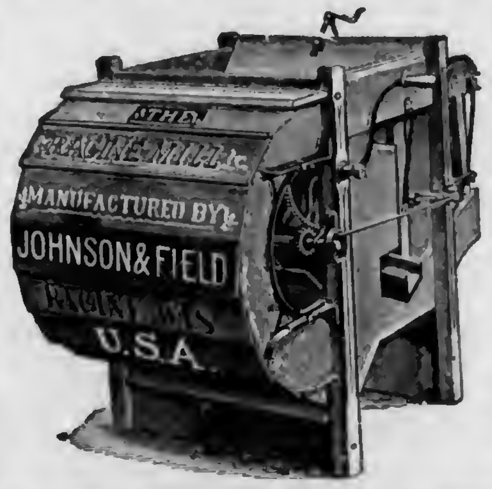

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MANUFACTURERS OF

The "Racine" Farm and Warehouse FANNING MILLS.

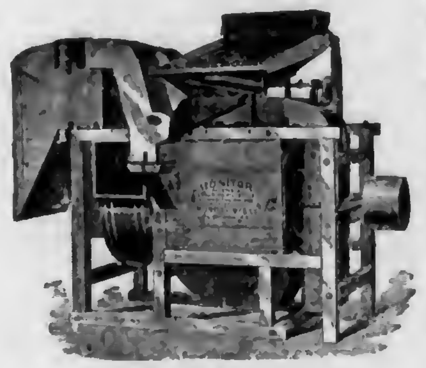
FOR EXPORT TRADE

We pack three mills in each case, all parts carefully marked, total cubic space 45 feet, or 15 feet for each mill. We save you freight.

Made in six sizes for cleaning and grading wheat, barley, corn, oats, rye and all kinds of grass seeds, beans, peas, rice, coffee, lentels, etc.

Write for Prices and Catalogue.

MONITOR GRAIN, COFFEE, RICE AND SEED CLEANING MACHINERY



Wheat Scourers,
Wheat Separators,
Oat Clippers,
Flax and Linseed Separators,
Wheat Smutters,
Barley Scourers,
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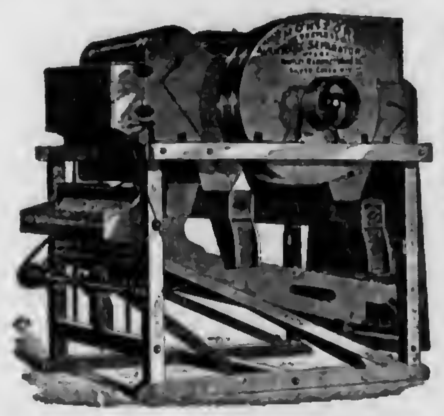
Seed Cleaners and Separators,
Fan Mills,
Corn Shellers,
Flour Packers,
Coffee Cleaners,
Coffee Separators and Graders,



Coffee Milling Machines,
Rice Graders and Separators,
Rough Rice Scourers,
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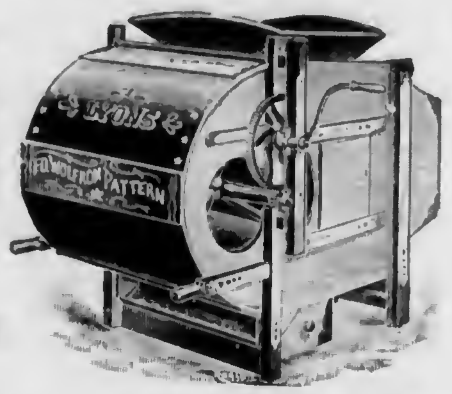
Malt Separators.

20,000 IN USE.

Used in All Countries of the World.



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Universally Registered.

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**STEEL PLATES and SHEETS of every grade--STEEL BARS of all shapes.
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COLD DRAWN SHAFTING, HOMOGENEOUS STEEL, HOT ROLLED STEEL SHAFTING { ROUNDS, SQUARES, HEXAGONS FLATS AND ODD SHAPES.

Styles of Packages.

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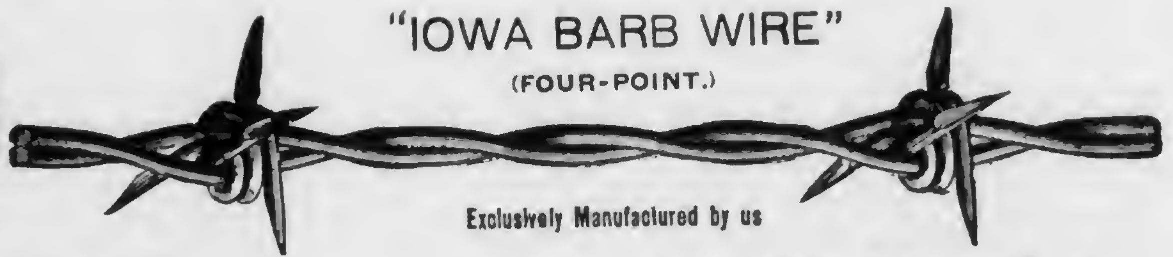
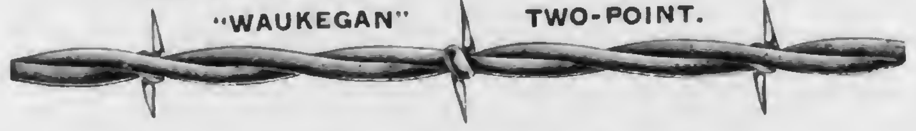
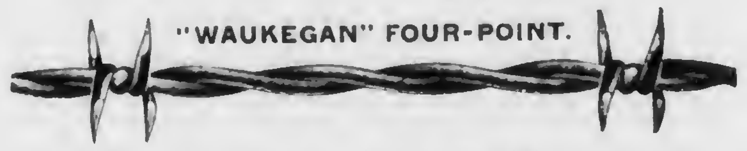


Exclusively Manufactured by us

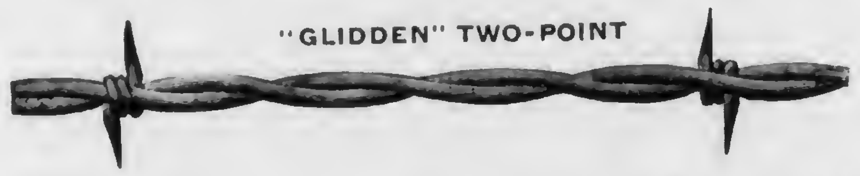
"WAUKEGAN" TWO-POINT.



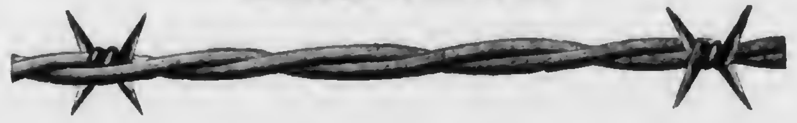
"WAUKEGAN" FOUR-POINT.

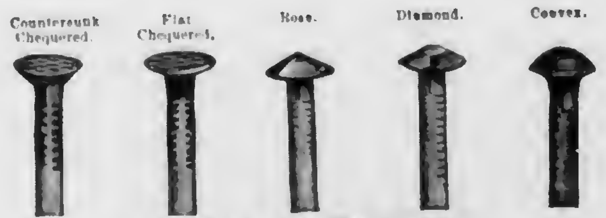


"GLIDDEN" TWO-POINT



"GLIDDEN" FOUR-POINT.



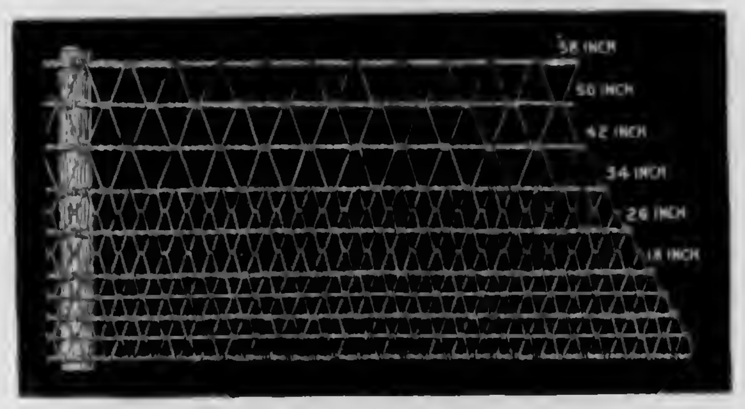


Some Special Nail Heads.

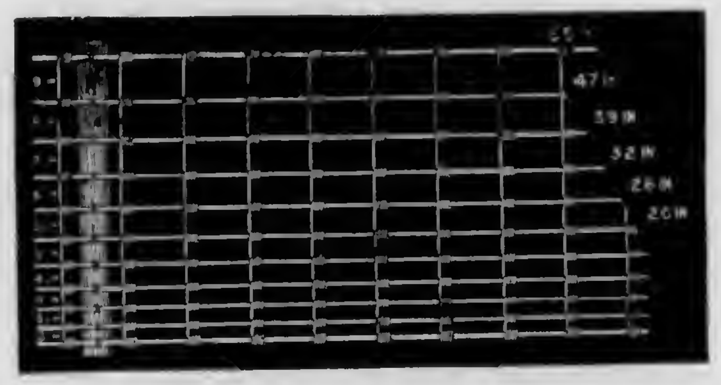
WIRE NAILS. Round, Oval or Square Wire.

Every Style of Head or Point. Our Nails are Guaranteed First-class in every respect, and will be found Stiffer, Stronger and Better made than European Nails. Packed in wooden kegs and cases, canvas bags and paper parcels of various sizes.

WOVEN WIRE FENCES. All made of Hard, Strong Steel Wires, heavily Galvanized.



ELLWOOD Steel Fences—6 heights, 6 styles.



AMERICAN Field and Hog Fences—6 heights, stays 12 in. or 6 in. apart.

The wires in these fences are large enough for all ordinary requirements, the fences being cheap, durable and efficient—will last a lifetime. Put up in rolls of 20 and 40 rods—sold by the rod. Perfectly adapted to fencing railroad rights of way, farms, fields, orchards, vineyards, etc.

Write for prices, catalogues, etc., covering any of the above, to our offices at 71 Broadway, New York, U. S. A. 29 Great St. Helens, London, E. C. **AMERICAN STEEL AND WIRE CO.**

DON'T IMAGINE
that because the
NEW AMERICAN
MANURE SPREADER
is known the world over as the most successful Spreader it costs most.

IN TRUTH IT COSTS LESS.

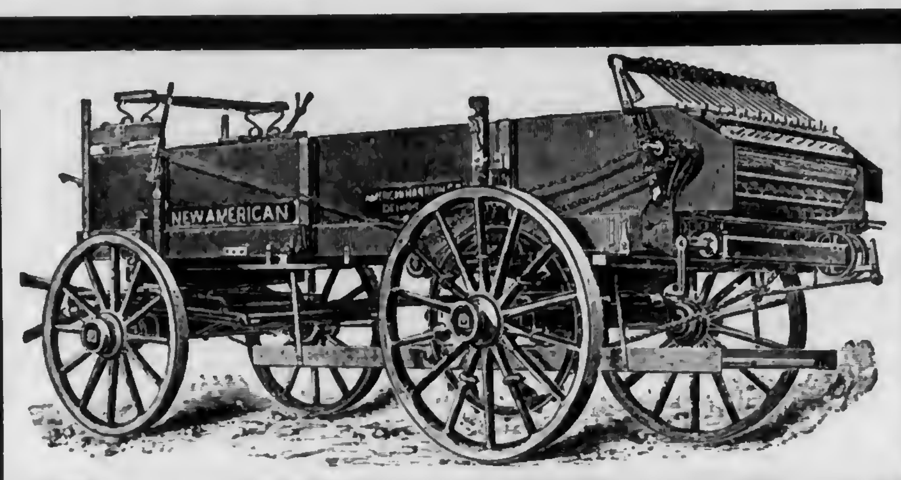
You can buy it as an attachment to fit your own wagon truck, and cut out the expense of gears and tongue and wheels and so forth.

Tears the manure fine or coarse. Spreads it thin or thick.

And there are a good many good things else it does that other Spreaders don't.

BOOKLET FREE.

Harrows Cultivators, Seeders, Planters, Road Levelers, Discs, Bean Harvesters, Truck Scales and Bicycles.



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DETROIT, MICH., U. S. A.

NE VOUS IMAGINEZ PAS
que le
NOUVEAU DISTRIBUTEUR
D'ENGRAIS AMÉRICAIN,
pour être connu à travers le monde comme le meilleur des distributeurs, soit le plus cher.

EN RÉALITÉ IL COÛTE MOINS CHER.

Vous pouvez l'acheter comme dispositif s'attachant au train de votre voiture ; et vous évitez toute dépense pour l'engrenage, la languette, les roues, etc. Il met l'engrais en morceaux gros ou fins, et le distribue en couches épaisses ou minces.

Et il y a beaucoup d'autres belles choses qu'il fait et que d'autres distributeurs ne font pas.

ENVOI GRATIS DE LA BROCHURE.

Herses, Cultivateurs, Semoirs, Planteuses, Rouleaux - niveleurs, Disques, Moissonneuses de Haricots, Basculesbrouette et Bicyclettes

The Name "OLIVER" is a Guarantee of Excellence.

CHILLED TRADE MARK. OLIVER

The Immense Factory Owned and Operated by
The Oliver Chilled Plow Works
Continues as Usual to Turn Out the Best Plows Made.

Europe, Asia, Africa, Australia, North and South America, and the Islands of the Sea compliment us by using our
WORLD RENOWNED CHILLED PLOWS.

And at Home and Abroad THE OLIVER Is the Standard of Excellence.

Our large and varied assortment provides for the most exacting style of plowing, and from the easiest to the most difficult soils.

Oliver Chilled PLOWS
Are the Best on Earth.

The rigid system of tests and inspection in force at our works guarantees to every purchaser a first-class plow, perfect in every detail and reliable under all circumstances.

MADE BY OLIVER CHILLED PLOW WORKS South Bend, Ind. U.S.A.
OLIVER

The No. 40 Series Full Chilled Sloping Landside. Wood and Steel Beam.

Nos. 98 and 99 Oliver Steel or Wood Beam Combination Plow. With Reversible Point and Wing. Self-sharpening by use.

Our business has grown from 1,500 plows in 1873 to an annual output of more than 200,000 plows, and we have
The Largest Distinctive Plow Works in the World.

Oliver Chilled Plow Works,
South Bend, Indiana, U. S. A.

EXPORT IMPLEMENT AGE

Vol. III. Philadelphia, Pa., U. S. A., February, 1901. No. 5.

THE WALLA WALLA VALLEY.

One of the Garden Spots of the United States Pacific Coast.

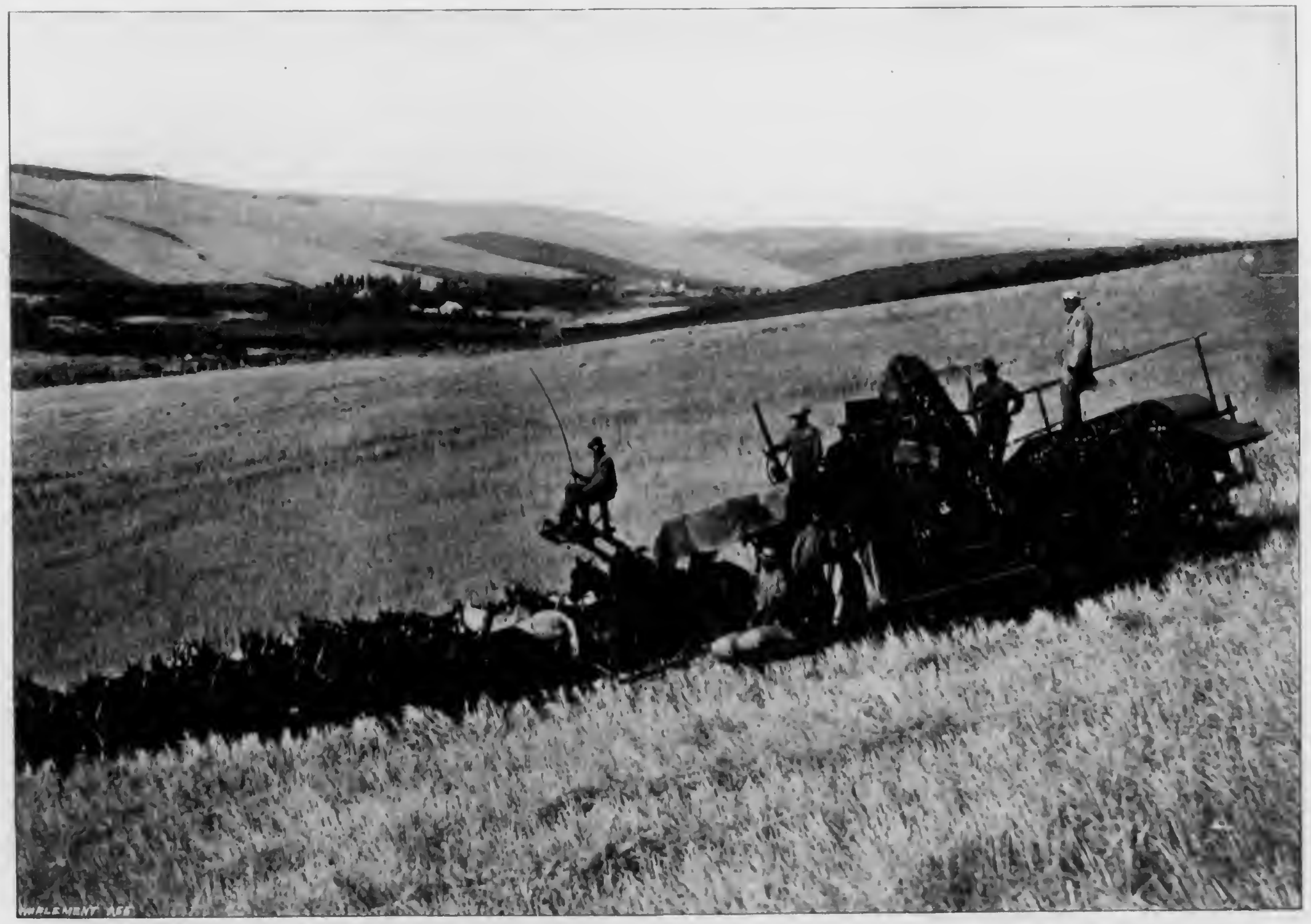
The wonderful fertility of the soil in the Walla Walla valley can best be understood when it is stated that, acre for acre, the yield of wheat is double that of the famous wheat lands of the Dakotas, and no section raises better grain than that which grows on the broad acres of the Walla Walla valley. The yield per annum is about 4,500,000 bushels for the entire valley; the average yield per acre, year after year, is fairly and honestly stated at 30 bushels, while in numerous instances successive crops have gone much higher, and in some cases twice as high. In one well-authenticated instance the yield was 72 bushels to the acre. Summer following is oftentimes resorted to to get rid of foul growth, though under increased cultivation the rich soil produces too heavy growth.

The yield of oats and barley is parallel to the immense yield of wheat—oats, 90 to 100 bushels per acre; barley, 40 to 80 bushels. As for corn, the claim is not made that it is an extra corn country, yet nearly every farmer has a field of corn, and fields of 5 to 20 acres are common, yielding 25 to 40 bushels per acre.

Among the many industries developed during the past ten years, that of fruit raising has probably made the most decided progress. Orchards, of any size, began to bear in 1893; Dr. N. G. Blalock then shipped the first carload of Walla Walla fruit that ever went east, direct to Chicago, and the apples and pears found a ready market in that city. The fruit industry has grown at rapid bounds, and in 1898, the last heavy fruit year, 400 carloads of prunes, plums, pears and apples were shipped to large Eastern cities.

The raising of fruits of every variety, including berries, currants and the like, is made possible and profitable by a system of irrigation, the waters used being taken from the Walla Walla river and its numerous tributaries. This water supply is practically limitless, and thousands of acres of arid lands have become gardens because of its use.

In Walla Walla county there are about 15,000 head of horses and 12,000 head of cattle, with probably 75,000 head of sheep, though this by no means represents the total number of sheep the wool-clip from which is handled in Walla Walla.



Oliver Cromwell Harvester, 1899. Combined Harvester and Thresher. Walla Walla and Pelouze Valleys, State of Washington, U. S. A. 32 horses. 20-foot cut. 6 to 8 tons weight
Oliver Cromwell Erntemaschine, 1899. Ernte- und Dreschmaschine combinirt. Walla Walla und Pelouze Thaler im Staate Washington, Ver. Staaten. 6 Meter Schnittweite. 6 bis 8 Tonnen Gewicht.
Moissonneuse Oliver Cromwell, 1899. Moissonneuse-Batteuse. Aux Valées Walla Walla et Pelouze, Etat de Washington, Etats-Unis. Coupe de 6 mètres. Poids de 6 à 8 tonnes.
Segadora Oliver Cromwell, 1899. Segadora y Trilladora combinadas. En los Valles Walla Walla y Pelouze, Estado de Washington, Estados Unidos. Corte de 6 metros. Peso de 6 á 8 toneladas.

THE DEVELOPMENT OF AGRICULTURE.

European economists have of late been directing attention to two significant developments,—viz. emigration from overcrowded European centers to the four corners of the globe; and second, to the remarkable development of agricultural possibilities in so many of the countries now being opened up by civilized effort. The reports of consuls of the United States, Great Britain and other countries, bear out the second statement especially. These developments are of importance, and demand a little consideration.

The greater portion of the nineteenth century was devoted to the development of mechanical appliances in which steam was the motive power. All other developments were incidental, even agriculture, vast as has been its expansion. The feature of the coming century, strange as the prediction may sound, will be the development of agriculture first, and mechanical and electrical power incidentally.

HEADING WHEAT.—Header cutting off the heads of wheat from a large grain farm in North Dakota, U. S. A.
(Illustration used by permission of the Johnston Harvester Co., Batavia, N. Y., U. S. A.)

KÖPFEN DES WEIZENS.—Ein Köpfer während des Abschneidens der Weizenköpfe auf einem grossen, Getreide bauenden Landgute in Nord Dakota, Ver. Staaten.
(Mit freundlicher Erlaubnis der Firma Johnston Harvester Co., Batavia, N. Y., Ver. Staaten, nachgedruckt.)

ÉTÊTAGE DU FROMENT.—Une étêteuse en train de trancher les têtes du froment sur une grande propriété cultivant le blé, au Dakota du Nord, États-Unis.
(Reproduit avec permission de la maison Johnston Harvester Co., Batavia, N. Y., États-Unis.)

DESMOCHANDO EL TRIGO.—Una descabezadora segando las cabezas del trigo en una hacienda cultivadora de granos, en Dakota del Norte, Estados Unidos.
(Reproducido con el permiso de la casa Johnston Harvester Co., Batavia, N. Y., Estados Unidos.)

There are many strong reasons for this. The engineer, the iron and steel worker and the engine builder have been the men of the hour, day, year and century. The man of the coming century will be the typical man of the hoe,—but not with a hoe,—with the mightier appliances which science and invention have brought to his service. Speaking broadly, and for the especial benefit of our readers in all foreign lands, the cultivation of the soil, by more or less scientific methods, by all peoples under every sun, is to be the next great departure, the next great uplifting movement that is to put the civilization of the world on a higher plane. This can only be done by the employment of the best mechanical agencies that the skill of the most advanced nations can furnish.

Since the dawn of miscalled civilization, war has been the source of activities. The most warlike nations made the best progress. War was the great stimulating agency.

The greatest departure ever made in the path of material, intellectual and moral progress ever conceived in any age is now about to be taken, not by one or two or three countries, but by all. And simply and almost solely by and through the tilling of the soil: not a little patch here and a little patch there, not by an irrigation scheme here and there, and a little colonizing yonder. The impulse to this grand development will not be merely commercial. It will be deeper. It will find its origin in human nature, in individual necessities and in weariness of old antagonisms, which manifested themselves in and through war. The world has been working for two or three decades up to this point. The greatest moral necessity that ever accumulated in the pathway of humanity is now before it, and there is only one outcome of it and for it, and that is the outflow of the millions from hovels, cabins, shacks, tents and holes to cover poverty, semi-nakedness and inherited sloth.

In a word, all the factors are now ready. The world abroad is being cobwebbed with railroads, and naked savages look in wonder at the strange bands of steel that carry stranger demon-like, fire-spitting, steam-spurting machines that move faster than the animals they hunted for meat. Steamships are starting out from scores of ports to sail everywhere, bearing goods, machines, implements, tools, etc., for the idle hands of unemployed peoples in all lands to use.

At first glance the European, South African, Australian or Asiatic reader will say that this is impossible. Nevertheless, the condition is on us, and on all. Africa is being opened up and its millions will learn to till the soil with appliances brought from the factories of Europe and America. Asia, starting in from India, is being opened up. Rapid inroads are being made in unsettled Australia. All South America is being invaded by inches. Soon it will be by greater measure.

Where a bushel of grain is raised in 1901, two will be raised in 1903. Where want is the rule, plenty will come. Where one ship sails, a dozen will follow. Where one locomotive sends its shrill whistle through virgin woods and valleys of new lands, a dozen will ere long carry their loads of stimulated products.

Those who are opening the way for American implements and machinery in foreign lands might as well set their stakes this far ahead. It is well to know the drift, the direction, of the forces. The great epochs in the world's history have, when the forces that caused them reached the bursting point, come suddenly. So will this one. The mighty forces are near the bursting point, and in the upheaval at hand the implement merchants will be the leaders in the early decades of this, the grandest century of human progress along the pathway of peace.

STEAMSHIP SERVICE TO APIA.

Consul Doty reports from Tahiti, November 16, 1900, the arrival of the American steamship "Australia" (3000 tons) on the 13th instant. This vessel, he says, inaugurates the new line between Tahiti and San Francisco, as set forth in his report of March 10, 1900.

The "Australia" brought about 700 tons of general cargo, and will have a full cargo back. It is to be hoped, adds Mr. Doty, that this excellent service will be maintained, as it will give great impetus to United States trade with the Eastern Pacific.

Freight rates are as follows: General merchandise, $7 and $8 per ton; lumber, $8 and $9 per thousand feet.

Passenger rates are: First-class, $120; second-class, $65; steerage, $40; round trip, $180 first-class.

Sailings from San Francisco will take place January 6, 1901, February 8, March 13, April 15, May 18, June 20, etc.

A report from Consul-General Osborn, of Apia, dated November 1, 1900, says that the new line of steamers of the Oceanic Company is to be put into operation at once, and that Pago Pago will be made the Samoan port of call. This may injure United States trade in Apia, as merchants object to receiving goods via Tutuila. With increased facilities, Mr. Osborn thinks freight rates (which have always been high) should be reduced enough to cover the cost of quick transportation between Pago Pago and Apia. Many American goods, he adds, come via Sydney. United States kerosene goes east to the seaboard, thence 15,000 miles to Sydney, thence 2000 miles to Apia, and is delivered cheaper than if it came direct from San Francisco.

The attention of our readers abroad is invited to the interesting fact that the French Government has, through Mr. F. K. McIlwaine, of the American Chamber of Commerce, Paris, just closed a contract at Philadelphia for the shipment of 200,000 tons of coal. The great industrial managers of France are becoming alarmed at the possibility of the supply in England being cut down or cut off, and they are looking to the United States for future supplies.

A GERMAN REVIEW.

The attention of importers and exporters throughout the world is called to the comprehensive review of the trade relations now existing between the United States and the outside world, in a most scholarly article in the Hamburger "Fremdenblatt," entitled "The American Danger." If Americans said the same things of themselves that this journal says of America the language would be attributed to the desire to appear to advantage before the outside world. The truth of the statements concern every merchant throughout the world. The article shows in brief that a full one-third of all the United States exports were manufactured products which supplant in large degree manufactured products heretofore made in Europe.

It shows how the American Union is marching ahead with gigantic strides from an agricultural to a manufacturing nation, whose industrial exports in 1900 were valued at $432,284,336, and asks, "Do not such an enormous increase and the correspondingly rapid progress in production and selling constitute an imminent danger for all competing nations?"

The article proceeds to trace the industrial development of the United States, how under protective tariffs industries grew to mighty proportions, how European capital so encouraged went in and built up the great transcontinental lines of railway and how the payment of interest on these loans kept the United States bare of money, particularly gold. This scarcity reached a point which made the United States wholly dependent upon Europe and enabled London to dictate the rate of interest.

The rest of the review shows how this condition of things changed to the present world-threatening conditions; how good harvests changed the balance of trade after 1890, sending money to America; how new and gigantic industries sprang up, based upon new and improved labor-saving processes; how this growth gradually emancipated Americans from foreign capital, and how the rate of interest was reduced to the normal figure, thus putting American industries on a new footing.

Then began the outward trade movement, which has now assumed such colossal proportions: First, the Americans sought and secured a fair percentage of trade in Central and South America, then Asia and Africa, and finally turned their eagle eye on Europe. Quoting the text of the review for a few moments, it tells us:

"Competent experts, well informed as to the industrial and export conditions which prevail in the United States, have established the following facts: The steel manufactories of the United States, which two decades ago were in their infancy, to-day control the markets of the world, dictate either directly or indirectly the prices of iron and steel in all countries, and, partly through the richness of their supply of iron ores and coal, partly by the use of labor-saving machinery and skillful, effective means of transportation, have attained a position to not only compete with the older iron and steel-producing countries, but even to profitably export their products to England. American tools, especially hatchets, axes, files, saws, boring implements, etc., enjoy by reason of their excellent quality the best reputation, and, in spite of their higher price, stand above competition in nearly the whole world. Also in sewing machines, bicycles and agricultural implements of every kind, the United States has begun to drive England and Germany from the world's markets, especially that of Russia, which may be partly attributed to the fact that American firms are protected in their own market from foreign competition and can thus sell their manufactures cheaper abroad than at home. A remarkable change has also taken place in the field of boot and shoe production. Hardly more than ten years ago the United States imported shoes from Europe,—especially women's foot wear from Austria, while other grades were made of leather imported from England and Germany. To-day it not only makes its entire supply of leather at home and exports it in considerable quantities, but it floods Europe with ready-made shoes, competes with the products of cheap labor in England, establishes shoe depots in Paris and even in the principal cities of Germany. That the United States, by reason of its richness in mineral oils and aided by its unrivaled facilities for refining and transporting this international necessity, controls the petroleum trade of the world and is held in check only by Russia is well known. The experience of the past few months proves that within a not far distant period the coal of the United States will play the same rôle in the markets of the world. Incidentally, it may be remarked that the typewriting machine with which this article is written, as well as the thousands—nay, hundreds of thousands—of others that are in use throughout the world, were made in America; that it stands on an American table, in an office furnished with American desks, bookcases and chairs, which cannot be made in Europe of equal quality, so practical and convenient, for a similar price. The list of such articles, apparently unimportant in themselves, but in their aggregate number and value of the highest significance, could be extended indefinitely. But it would seem more interesting and characteristic to cite the fact that an American syndicate is now planning, and has even taken the initial steps in a scheme, to take in hand the whole sleeping-car service of Europe, to improve it and make it cheaper than is now possible. Moreover, American manufacturers of underclothing, gloves and men's clothing, as well as women's cloaks,—all articles which a few years ago were exported in vast quantities from Europe to the United States,—are already beginning to calculate how they can place their surplus output in European markets."

HARVESTING.—The three mules and machine cut 150 acres of wheat in Texas, U. S. A., averaging 16 acres per day.
(Illustration used by permission of the Johnston Harvester Co., Batavia, N. Y., U. S. A.)

ERNTE SCENE.—Die drei Maulesel schneiden mit der Maschine 150 Acker Weizen in Texas, Ver. Staaten, im Durchschnitt 16 Acker pro Tag.
(Mit freundlicher Erlaubnis der Firma Johnston Harvester Co., Batavia, N. Y., Ver. Staaten, nachgedruckt.)

SCÈNE DE MOISSON.—Les trois mules et la machine coupent 150 acres de froment au Texas, États-Unis, en moyenne 16 acres par jour.
(Reproduit avec permission de la maison Johnston Harvester Co., Batavia, N. Y., États-Unis.)

ESCENA DE COSECHA.—Los tres mulos y la máquina siegan 150 acres de trigo en Texas, Estados Unidos, por término medio, 16 acres por día.
(Reproducido con el permiso de la casa Johnston Harvester Co., Batavia, N. Y., Estados Unidos.)

The article, so able in its treatment of this most valuable review, concludes by saying:

"We must fight Americanism with its own methods. Europe must adopt improved and progressive methods in every department of industry: must use more, and more effective, machinery. Manufacturers as well as merchants must go to America, send thither their assistants and workingmen, not merely to superficially observe the methods there employed, but to study them thoroughly, to adopt them, and wherever possible to improve upon them, just as the Americans have done and are still doing in Europe."

The object lesson of all is that the merchants of the world cannot afford to ignore the United States, and will benefit themselves and their trade by handling its products. It is entitled to this preference because it has earned it. The United States manufacturers ask no trade favors. They rely upon the instincts and intelligence of the outside world to profit by.

CENTRAL AND SOUTH AMERICA.

Merchants are Urged to Attend the Great Exposition at Buffalo, U. S. A.

There opens shortly at Buffalo, New York, U. S. A. (some 470 miles by rail from New York city), reached by express trains in ten hours, what will doubtless prove to be the most important exposition ever held on either side of the Atlantic to the merchants of Central and South America.

It will be an exposition which merchants of those countries can attend with great and lasting profit for very many cogent reasons. Being in the same hemisphere, living under similar conditions very largely, bound together by commercial ties which can be made stronger, needing us as much as we do them, as is shown in our enormous imports from and exports to these two great geographical regions, it is but natural that the merchants of the Southlands should take advantage of the rare opportunity to come north and see what the United States really is in the year 1901.

The time has come for the fusing of the commercial interests of the people of North, Central and South America. The United States imported, during eleven months of this year, from South America products valued at $90,852,930, as against $75,519,747 for the same period of 1898. The exports to South America from the United States for eleven months of 1900 were valued at $37,903,636, against $31,700,309 for the same eleven months of 1898, which is less than one-half exports to imports. Central and South America have in North America a practically unlimited market.

The advantages which European manufacturers have had over those of the United States in competing for the Central and South American trade are rapidly diminishing. The United States has made leaps and bounds within a few years, and even now Europeans are devising ways and means to protect themselves from American competition.

But apart from any evidences of commercial supremacy the facts are that the United States has become a world power, a manufacturer of a vast variety of things wanted in Central and South America, as her exports of almost $100,000,000 last year show. Ship lines are being established, shipyards are being created to turn out more ships to carry products abroad. Cheapness and excellence are features of American products. Her cotton fields and her cotton mills beside them are fast enabling the country to command the cotton goods trade of the world, as it has long controlled in some other lines.

The Buffalo Pan-American Exposition opens in May and continues six months. It will contain exhibits of all the industries of the United States from ocean to ocean. It will present abundant and entertaining evidences of material growth. The United States will be there, shown in miniature. Every activity, every interest, every source and agency of wealth, will be visible. There will be congregated also her merchants, manufacturers, the managers of her industries and her representative men in all walks of life.

MR. CYRUS H. McCORMICK.
President McCormick Harvesting Machine Co., Chicago, Ill., U. S. A.

Newspaper-cable reports state that he was created by the French Government Officer of the Legion of Honor

Eine an die Presse ergangene telegraphische Meldung zeigt seine Ernennung seitens der französischen Regierung zum Offizier der Ehrenlegion an.

Un telegrama dirigido á los periódicos anuncia que ha sido nombrado oficial de la legión de honor, por el gobierno francés.

Une déspêche adressée à la presse annonce qu'il a été nommé officier de la légion d'honneur.

The American people themselves feel that more intimate fellowship with the peoples of Central America and South America should be encouraged. They will welcome the merchants and all citizens from those countries. Preparations have been made to render their coming pleasant and profitable. The peoples of the Western hemisphere know too little of each other. Their representative men can now meet in profitable intercourse. The United States have a wealth of productions to show, and a warmth of greeting will be extended to all who may come, which will lay the foundation for closer business relationships.

The time is short. It is to be hoped that the chambers of commerce and other commercial organizations will also take action in this vital matter, and that our brother merchants of Mexico, Central and South America will come and see and learn, and from the personal acquaintance of our people, and especially of those who have done so much to make the United States the power it has become in the world of industry, commerce, railroads, finance and international trade. The like opportunity will not soon occur again.

That the agricultural implement and vehicle display alone will be a great attraction is not to be doubted, and the dealers and merchants handling those lines will receive a royal welcome.

MEAT AND IMPLEMENTS.

A large proportion of the grain grown in the United States is converted into beef and pork, and these products go to all countries. It is safe to assert that implement manufacturers are, to a certain extent, dependent upon our meat products. Some one who has given the matter attention states that one firm in Chicago, dealing in meat, does the following amount of business: Annual sales exceeded $160,000,000. Annual shipments, 110,969 carloads. Refrigerator cars, 4,600; other cars, 1,160. Employés, 18,778. Weekly pay-roll, $211,252.50.

Manufactured product—230,102,657 pounds of lard; 6,515,917 pounds of wool; 3,925,332 pounds of neatsfoot oil; 6,285,730 pounds of glue; 11,750,155 pounds of butterine; 31,354,846 pounds of tallow and grease; 60,037,669 pounds of oil; 90,787,407 pounds of hides; 104,726,333 pounds of fertilizer.

Size of plants—Chicago, 40 4-5 acres of land, 38½ acres of buildings; Kansas City, 19½ acres of land, 7½ acres of buildings; Omaha, 23 acres of land, 6 acres of buildings; St. Louis, 37 1-3 acres of land, 7½ acres of buildings; St. Joseph, 19¼ acres of land, 5 acres of buildings; St. Paul, 16 acres of land, 4 1-3 acres of buildings; making a total of 155 4-5 acres of land and 69 1-3 acres of buildings for the six packing plants.

Machinery—67 engines, 140 boilers, 28 dynamos.

Lighting—17,383 incandescent lights, 340 arc lights.

Refrigeration—26 refrigerating machines, with a daily capacity of 5,150 tons of ice, and cold storage capacity of 16,400 cattle, 17,350 sheep and 49,290 hogs at one time. Refrigerator systems have also been built into 28 ocean liners.

Largest number of animals handled in one day, 10,343 cattle, 19,607 sheep and 26,865 hogs—total, 56,815. Largest day's slaughtering poultry, 29,802. And yet this is one of the smaller firms in this traffic.

As the United States now leads the world in iron and steel production, her implement manufacturers have a great advantage. It is always cheaper for a farmer to buy in the markets where the raw material is most plentiful and which is also manufactured where it is produced.

STEAMSHIP LINES AND FREIGHT.

European and all foreign commercial interests have a more or less distinct understanding of the character and extent of the development of American shipping, but the magnitude of the development is not understood, nor is the influence of that development on European and Australian trade fully comprehended. Never was it so necessary to keep posted as to shipbuilding progress in the United States as just at this time. An unusual number of new lines, trans-Atlantic, trans-Pacific and coast lines, have been or are being established during recent months, of which the following are mentioned:

The Leyland Line established a new direct service between New York and Liverpool, freight vessels, all except one. The same company also inaugurated a new service between London, Vera Cruz and New Orleans, tri-weekly departures.

The Pan-American Steamship Co., capital $5,000,000, will soon run a weekly line of twin-screw steamers between New York, Manila and China, in which St. Louis merchants are interested; dead-weight capacity 7000 tons, speed 13 knots.

The White Star Line has established a service between New York and Australian ports.

Six large ships are being built by the Hansa Line between New York, South African ports and Calcutta.

The Campania Trans-Atlantica has inaugurated a new service between New York, Spain and Italy and between New York, Havana and Vera Cruz, touching at Spanish and Italian Mediterranean ports.

La Veloce Navigazione Italiana a Vepore is about inaugurating an express service between New York and Naples. Sailings every 20 days each way. Capacity, 10,000 tons dead weight.

The Scandinavian-American Line has contracted for the construction of a large fleet of fast steamers to ply between New York and Copenhagen; also four ships between Boston and Copenhagen.

The first vessel of a new line between Philadelphia, Rotterdam, Amsterdam and Leith has already been launched by the William Penn Steamship Company, who will build boats for the coastwise trade.

The Virginia Line has been established between Norfolk, London and Liverpool, freight connections having been made with several railways. There are six vessels of from 7000 to 11,000 tons.

The steamship "Florida" has started to run between New York and Sydney.

The American-Hawaiian Steamship Company has inaugurated a service between New York, San Francisco and Honolulu, with seven large cargo vessels. These will be very large vessels.

The Colonial Steamship Company will establish a line of freight steamers between Seattle and Manila.

A second line is being planned by the China Mutual Steamship Company to carry grain, lumber, supplies and manufactured articles from Puget Sound and bring back hemp and hard wood.

The Pacific Steam Navigation Company and the Campania Sud Americana de Vapores have established a line between San Diego and Valparaiso, touching at the principal Mexican and Central American ports, and terminating at San Francisco. At Valparaiso the steamers will connect with vessels of the Pacific Steam Navigation Company running to Liverpool.

The Oregon and Oriental Steamship Company will start an Oriental steamship service from Portland, Ore., and will ply between Portland and Japanese and Chinese ports.

The Great Northern Steamship Company, incorporated by James J. Hill, at Minnesota, will build a fleet of ships to connect with the Great Northern for the Oriental trade. The same company has chartered five vessels of the Leyland Line for five years to carry grain between Quebec and England, the service to be weekly.

MR. WILLIAM DEERING. Deering Harvester Co., Chicago, Ill., U. S. A.

Newspaper-cable reports state that he was created by the French Government Officer of the Legion of Honor.

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The Oregon Railway and Navigation Company will operate four ships between Portland and China and Japan.

The Hamburg-American Line is sending a vessel every ten days from New York to Hayti, Columbia, Port Limon and Jamaica.

The Bluefields Steamship Company will send a vessel weekly from New Orleans to San Juan del Norte, Port Limon and Costa Rica.

The Peninsular & Occidental S. S. Co. operates eight vessels between Tampa, Fla., and various Central American ports.

There are quite a number of important ship line enterprises besides these and which are to be established, but they have reference to the coastwise service of the United States exclusively and need not be included in a summary of enterprises having foreign commerce in view.

FOREIGN INVESTMENTS.

One of the most recent, and in a sense the most powerful, commercial tendencies entering the Twentieth Century is the very generally unobserved fact that countries possessing great capital are expending liberally of their capital in other and poorer countries. Just what these expenditures amount to no authorities have more than approximately ascertained. It is figured out that Germany has $800,000,000 invested in foreign countries, which fact has considerable to do with her present financial stringency. What Great Britain, or rather her moneyed people, have invested in foreign lands is an unascertainable volume. The financial stringency which spread over England a few years ago, and which came under the head of the Baring failure, was largely due to the excessive investments abroad. Belgium capitalists have invested heavily, and the $95,000,000 invested in Russia alone pays only 2 per cent. on an average in the one hundred and forty-eight different enterprises enumerated. France has immense sums invested abroad, largely under the supervision or guidance of the Rothschilds. All this indicates that an altruistic spirit and philosophy is commercializing the world, spreading the products of a higher civilization in a lower, and stimulating latent capabilities of half-awakened peoples to possibilities. The world is to be revolutionized industrially, for through industry better conditions will come.

ENORMOUS CARGO OF WHEAT.

The large American ship "Shenandoah" sailed recently with the second largest cargo of the season. She carried 102,248 centals of wheat for Liverpool, valued at $105,315. The largest cargo was taken out by the ship "Roanoke" several months ago, and exceeded that of the "Shenandoah" by 5000 centals.

The Commercial Travelers' Protective Association in America, composed of hundreds of travelers, hold annual meetings at different points.

EXPORT IMPLEMENT AGE

FOR CIRCULATION IN FOREIGN COUNTRIES ONLY.

An independent journal devoted exclusively to the Export Trade in Agricultural Machinery, Pumps, Wind Mills, Farm Tools and Dairy Supplies.

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Under no circumstances do we allow commissions to advertising agents.

The United States, for the first time in its history, now leads all other countries in exports.

The use of agricultural implements increases every year. This is probably due to the fact that more land is annually being brought under cultivation.

Any agricultural implement that will permit of a saving of labor will soon pay for itself. Labor-saving appliances really cost nothing compared with the gain derived from their use.

Dairying is increasing in all countries. The cream separator has done more to revolutionize this branch of industry than all other causes combined. Dairying assists in providing a home market for the farm products.

Steel and iron are more largely entering into the construction of implements every year. Lightness, strength, durability and efficiency are thus secured. The wooden implements are clumsy and heavy, and not suitable for the progressive farmer of to-day.

The farmer who tills the soil cares nothing regarding the maker of an implement, provided the implement does its work well. The farmer should buy from any source possible, in order to secure those machines and implements that are the most efficient for his purpose.

The European farmer can procure an implement or machine from the United States almost as quickly as can the farmer in America. The United States cover a large area, but railroads and steamships shorten distances, and make trade between countries easier.

Handlers of American productions abroad will be pleased to learn that American commercial bodies have recently passed resolutions in favor of the metric system and a standardizing bureau, which is a step in the direction of uniformity of international standards.

The attention of Europeans is invited to the fact that the United States now leads the world as an exporter, surpassing Great Britain even. The ascertained exports for eleven months of 1900 were $1,308,013,789 for the United States, and $1,303,440,000 for Great Britain.

The fact that American wagons have been largely purchased for use in South Africa, to carry army supplies, is evidence of their excellence. Strong, made to stand the hardest wear and combining all the latest improvements, American farm wagons give satisfaction wherever they are introduced.

The EXPORT IMPLEMENT AGE is intended to spread knowledge regarding American agricultural implements, machines and vehicles. In so doing it does not disparage goods made in other countries, believing that honorable and legitimate methods will prove more potent than direct antagonism.

Many countries look to the United States for aid in agriculture, and are not disappointed. American catalogues are more frequently consulted. Farming enterprises are measured by what reliance can be placed on machinery. The difference between modern and not modern methods of agriculture are visible everywhere. The advantages of the best appliances are stimulating many who have worked without them to struggle to obtain such efficient help. From various portions of the world comes information of a coming demand for the best appliances.

An English journal warns the people of South Africa against the plans of unscrupulous merchants in Germany and America to send shiploads of rubbish to that country when the war is over. The reason for making such a statement is not given. The merchants in South Africa and exporters to that country can prevent that contemplated wrong by dealing with reputable firms. If reputable journals are consulted as to who to deal with it will add one more element of safety against wrong dealing. It is wrong, however, to accuse the German merchants of such practices unless proof can be presented. We are not favorable to the method of securing trade by disparaging the goods of friendly competitors. The German merchants who are reliable would themselves expose tricksters who may resort to illegitimate business practices.

If the foreign handlers of American implements will enter with zeal upon the spread of American implements in their respective countries they will very shortly be backed up with American enterprise by the establishment of warehouses for the display of manufactured products from the United States. Those warehouses where they have been established, have done much to further trade and strengthen the hands of implement merchants. Americans have the enterprise. The National Association of Manufacturers have the matter in hand. Give them encouragement and warehouses will come.

For the 11 months of 1900—to December 1—the United States sold Great Britain $1,374,078 worth of agricultural machinery and implements. France bought of the United States agricultural machinery and implements to the value of nearly $3,000,000, while Germany purchased about the same as France. These figures show that even in such enterprising countries as Great Britain, France and Germany, where factories are numerous, over $7,000,000 worth of agricultural machinery and implements were purchased from the United States for use on farms. At the same time these countries did not sell any implements to the United States. This demonstration of our ability to establish markets right in the midst of the great manufacturing centers of Europe should be a sufficient guaranty of the excellence, efficiency and cheapness of American agricultural implements.

The merchants, importers and exporters of the world will be pleased to learn that the world's stock of money has increased in three years from $4,000,000,000 to $11,600,000,000, or nearly three-fold. The meaning of this is that a much greater volume of business can be and is being done. The great problem confronting the world is not the building of navies, the upholding of armies or the construction of fortifications, but the increase of the world's stock and volume of money. True, this fact is not as widely recognized as its economic importance demands. The world has not yet emerged from its unscientific age. Broad intelligence has not yet become its basis and method of action. The nations are struggling for the possession of gold to be used as possible war budgets. The real thing to do is not to build up destructive agencies, but to create money, by which the half-employed energies of the advanced nations of the world can be more fully employed, and the latent and undeveloped energies of the lower nations can be energized into action for intellectual and physical betterment and moral progress.

SPAIN AND THE UNITED STATES.

It is gratifying to notice the friendly trade relations now existing between Spain and the United States. Although it has been but a short time since the two countries were at war, yet even the existence of war did not dispel the friendship between those who had in the past done business with each other. Individuals are not responsible for the acts of governments, and there is no reason why the Spanish and American people should entertain animosity. Fortunately for those who oppose war and delight in peace, time heals the wounds of the past and restores love and good will among all nations.

Spain is growing in population and progressing in trade more rapidly than for a century. She is relieved of the care and expense of ungrateful colonies, her sons remain at home to assist in her industries instead of being sacrificed on distant battlefields, and her farms will double their production, while factories will soon supply her people with articles that have been heretofore purchased in other countries.

Spain will always engage largely in commerce. Her geographical position is such that she has a great advantage for trade. She can find ready markets in North Africa for a large portion of that which she cannot consume at home, and she will yet prove a formidable competitor in all the markets of the world. It is possible that the time will come when the Spanish people will celebrate the severance of the colonies from the mother country as the greatest blessing of the nineteenth century. Spain will no longer be burdened with the governing of distant countries which keep her continually under arms, but will engage in improving her own people. She has plenty of work to do in promoting agriculture, encouraging manufactures and extending her commerce.

It is to the interest of Spain to trade with the United States because of the many advantages to both countries in so doing. Their products are desired in exchange, and the large population of the United States should make this country an excellent market for many of the products of Spain. Trade between the two countries will prove beneficial to the shipping interests of Spain, and we venture to claim that in a few years Spain will be well represented in the carrying trade, as is naturally to be expected of a country possessing such advantageous ports and with hundreds of miles of sea coast.

AN UNERRING SYSTEM.

One fundamental reason for the recognized merit of the American implements that are meeting with such favor throughout the world is that most of them are made in parts and by machinery which works unerringly, and which, in making one thousand or ten thousand like pieces or parts, does so with the utmost uniformity. There is no chance for slight, neglect or oversight. The human hand might slip or become weary and permit an element of weakness to enter the work, but the machine never varies, never thinks, never slips; hence it is that American implements are what they are. Each part is examined and tested, and when the parts are assembled they represent the best material, the best skill and the most perfect adaptation. This system of manufacture excludes defects and weakness. It stimulates skill by directing attention to one thing. It results in better machinery to do each part of the work, and the result, when it appears in the paint shop, is a triumph of mechanical skill and a symbol of excellence.

AN ENGLISH VIEW.

The London "Chronicle's" correspondent who investigated machinery exhibits at the Paris Exposition acknowledges that in the whole group of machine tools and minor mechanical appliances the United States is far in the lead. The chief advantage, he states, is the system of interchangeable parts, which has been so highly praised recently by other British observers, notably the correspondent of the London "Times," who investigated rather fully American competition with England in engineering. The "Chronicle's" correspondent says that the superiority of technical education in the United States is one reason for American pre-eminence in engineering, and he also mentions a point overlooked by most writers, but which in fact is largely responsible for our progress. This is that "the accomplished operative mechanic is a person of consideration and importance" in the United States, which he is not in Great Britain. The lad of good family who has a taste for mechanics is sent to a great university in America, and there he receives a thorough technical training. It is, then, the democracy of the American people and the absence of the class distinctions which have brought about and maintain American pre-eminence in manufacturing and mechanical industries.

MR. BYRON E. HUNTLEY, President Johnston Harvester Co., Batavia, N. Y., U. S. A.

Newspaper cable reports state that he was created by the French Government Chevalier of the Legion of Honor.

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THE WEAR AND TEAR.

It is when a machine begins to wear out that its real merit becomes apparent. At the start all machines and implements are at their best. It is when the repairing, breaking or wearing out period sets in that the farmer has to look to. There is a science in making a machine wherein all parts will equally wear. Of what avail is a machine that ought to last ten years—when from some unnecessary defect it gives out at three years, and requires repairs or mending? It is the characteristic virtue of the American implement that it is a harmonious creation. Its parts all know each other. When they get together there is harmony. Friction is at a minimum. There is no unnecessary or avoidable strain. Each part is called upon to do no more than its fair and right share, hence the wearing qualities, and for which reason, when the machine is old, it is virtually new. It keeps on doing its work, a fact which every tool tested in Europe testifies to. This lasting factor means something more than money difference in price. The real value of an implement is determined by the length of time it will do good work. This point is not always kept in sight by those who sell American implements. Many makes give out, and the owner forgets to count how long they lasted. Measured by the standard of endurance, the American implement fears no competition.

American inventions are more and more numerous every year. Improvements are going on in every kind of machine or implement. As soon as some piece of mechanism appears perfect some new discovery is made and it is improved. One of the great advantages possessed by American implements, therefore, is that those of one year are better than those of the preceding year, and it is this fact that enables the American farmer to feed the world. He uses the best implements made, and his products consequently cost him less than farmers in other countries.

The United States Bureau of Statistics of the Treasury Department, in its summary for November, gives for the eleven months of last year the imports of Manila as 38,684 tons, compared with 49,687 tons the preceding year, and 43,159 tons two years before. Over 30,000 tons came direct from the Philippine Islands.

OFFICIAL HARVEST RETURNS.

The Crops of 1900 Compared with Previous Years—New Acreage of Winter Wheat.

The United States Government crop report was promulgated December 27th. The crops are in excess of the previous estimates made. The estimated wheat harvest in September was 508,000,000 bushels, while the Department's report gives a yield exceeding 522,000,000. In the same way the latest estimate of the corn crop indicated 1,567,000,000 bushels, while the final harvest return is 2,105,000,000 bushels. The corn crop is one of the four largest. The outturn of oats—800,000,000 bushels—has been but once exceeded. Barley and rye each make the poorest showing, with one exception, since 1887; buckwheat has the smallest crop since 1883, and hay the smallest, with one exception, since 1888. The official figures of this year, compared with the final figures of last year, are as follows:

MR. J. L. STEINER.
Paris Manager of Plano Mfg. Co., Chicago, Ill., U. S. A.

OFFICIAL HARVEST RETURNS.

Wheat	1900.	1899.
Spring, bushels	172,204,096	250,624,266
Acreage	16,259,488	18,771,779
Winter, bushels	350,025,409	296,679,574
Acreage	26,235,897	25,820,737
Total bushels	522,229,505	547,303,840
Total acreage	42,495,385	44,592,516
Corn, bushels	2,105,102,516	2,078,143,933
Acreage	83,320,872	82,108,587
Oats, bushels	809,125,989	796,177,713
Acreage	27,364,795	26,341,380
Barley, bushels	58,925,833	73,381,563
Acreage	2,894,282	2,878,229
Rye, bushels	23,995,927	23,961,741
Acreage	1,591,326	....
Buckwheat, bushels	9,566,966	11,094,473
Acreage	637,930	670,148
Potatoes, bushels	210,926,897	228,783,232
Acreage	2,611,054	2,581,353
Hay, tons	50,110,906	56,653,754
Acreage	39,132,890	41,328,462

In actual figures the Department, it will be seen, estimates the wheat crop of 1900 at 522,229,505 bushels, the area actually harvested being 42,495,385 acres, and the average yield per acre 12.29 bushels. The production of winter wheat is estimated at 350,025,409 bushels, and that of spring wheat at 172,204,096 bushels, the area actually harvested being 26,235,897 acres in the former case and 16,259,488 acres in the latter. The winter wheat acreage totally abandoned in Ohio, Michigan, Indiana and Illinois is placed at 3,522,787 acres, and spring wheat acreage totally abandoned in North Dakota and South Dakota at 1,793,467 acres.

The extraordinarly rapid rate at which the winter wheat acreage of Nebraska is gaining upon the spring wheat acreage of that State has necessitated special investigation of the relative extent to which the two varieties were grown during the past year. The result of the investigation is that no change is called for in the total wheat figures of the State, though 590,575 acres have been added to the winter wheat column at the expense of the spring variety.

TRAIN LOADS OF IMPLEMENTS.

If some of our European merchants and farmers could witness one of the shipments of implements sent out by some enterprising American manufacturer it would no doubt excite surprise. It is nothing unusual for a manufacturer to start from his factory a train of forty cars loaded with wagons, or threshing machinery, or cultivators, or harvesters, or whatever he may manufacture, and these goods will be sent to some large city a thousand miles away, there to be divided and again shipped in different directions. Recently one of these trains left a factory consisting of twenty-five cars, each 52 feet long. On the train were 25 engines, 30 grain separators, 22 feeders, 22 wind-stackers, 21 weighers and other machinery valued at about $150,000. It was estimated that about 200,000 people inspected the train on its route, and that 50,000 souvenir circulars and buttons were given away. A photographer on board took 3000 pictures of the train, of which number 1500 were taken while the train was going at the speed of twenty miles an hour.

MR. J. L. STEINER.

At our request, Mr. J. L. Steiner, the manager for the Plano Manufacturing Co., at Paris, with headquarters at No. 14 Rue de Magdebourg, permits the use of his portrait in this issue. Mr. Steiner is well known in this country and also over Europe. As an efficient and capable manager he has demonstrated his ability by the large trade he has built up. He fully understands European requirements, and has done more than his share in pushing American harvesters to the front. Personally Mr. Steiner is popular, and makes friends wherever he goes and among all classes. The Plano business is sure to further expand under his management.

MR. FRANK R. PACKHAM.

Mr. Frank R. Packham, of the Superior Drill Company, Springfield, Ohio, U. S. A., whose portrait we present, started for Australia about three months ago in the interest of his company. It is probable that he will also travel over Russia, Germany and other European countries. The grain drills made by the Superior Drill Company are well known wherever grain is grown, and Mr. Packham is going over a large portion of the foreign field in which they are used.

HEAVY EXPORTS LAST YEAR.

A record of American exports unparalleled in the history of the country is shown by the complete figures for the calendar year 1900, which have been completed by Chief Austin, of the Treasury Bureau of Statistics. The exports of merchandise for the calendar year 1900 reached the unprecedented total of $1,478,050,854. The imports were $829,052,116, leaving an excess of merchandise exports of $648,998,738. This excess was only about $28,000,000 larger than 1898, but the volume of exports was $223,000,000 larger in 1900 than in 1898, and the volume of imports was about $195,000,000 larger. The total exports of the calendar year 1898 were $1,255,546,266, and for the calendar year of 1899, $1,275,467,971. The imports of 1898 were $634,964,448, and those of 1899 were $798,967,410.

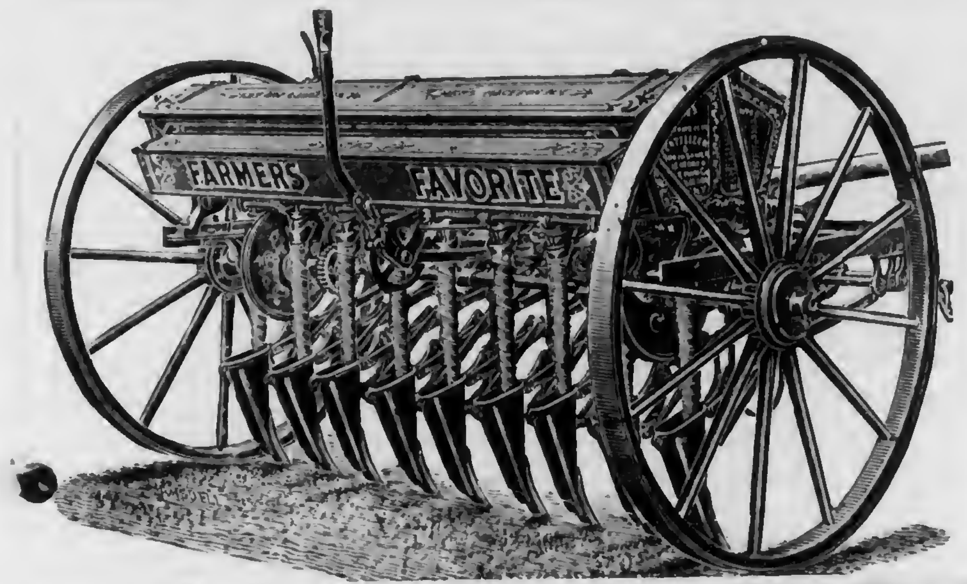
The figures for the calendar year just closed showed a larger volume of exports than for the fiscal year ending June 30, 1900, when total exports were $1,394,186,371, and imports were $849,714,670. The exports of December were $145,994,606, and imports were $68,599,609, creating an excess of exports for the month of $77,394,997.

IMPROVING THEIR FACTORY.

The Iowa Farming Tool Co., of Fort Madison, Iowa, have, during the past year, been building improved, additional machinery for their finishing and polishing departments, and have just completed moving them into a new three-story brick and stone building 50 by 150 feet; this also gives them a considerable enlargement to their forging department.

MR. FRANK R. PACKHAM.
Superior Drill Co., Springfield, Ohio, U. S. A.

Although the new finishing shops are considerably larger than the old ones, the company has recently completed still another finishing shop building, 40 by 162 feet, two-story, which will be running by the 1st of January, to prepare for caring promptly for rush orders, which always come in in the winter and spring. This new building will be run and lighted by electricity.



A REPUTATION OF 50 YEARS

A COMMON SENSE PROPOSITION

We have been engaged in the manufacture of Grain Drills for fifty years. We make nothing else. Our machine is made by skilled mechanics of Grain Drill experience.

The FARMERS' FAVORITE Grain and Fertilizer Steel Frame Drill

is the BEST IN THE MARKET. Compare it for substantial and careful construction with any other.

All steel. The only drill with indestructible Spiral Steel Grain Tubes. Axles and Shafts of fine Cold-drawn steel. Lightest draft. Most accurate distributer of Grain and Fertilizer.

WE COPY NO ONE

But we have many imitators. The Wizard Force Feed Fertilizer; the original Double Distributer; the quick change, accurate and simple speed device—all original "FAVORITES."

Agents and Farmers always pleased

BICKFORD & HUFFMAN CO.
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Engines AND Boilers

In a variety of sizes and styles from 3 to 50 Horse-power. Specially well adapted for export trade. Good agents wanted. Catalogue with prices and full information on application.

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de todos tamaños y formas desde 3 hasta 50 caballos de fuerza, especialmente adaptadas para la Exportación. Se desean buenos Agentes. Catálogos con precios é informes completos, son enviados á los que los soliciten.

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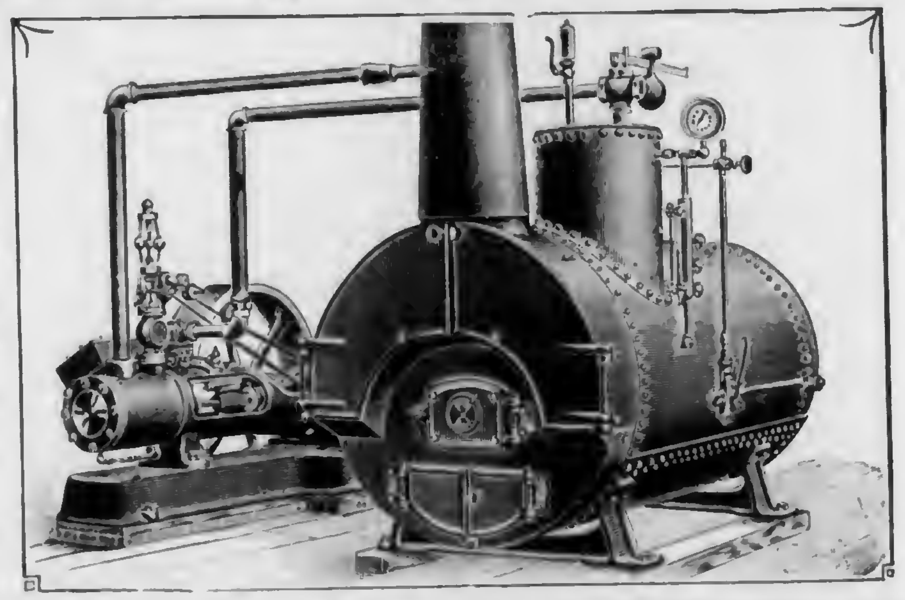

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Made honestly of good materials
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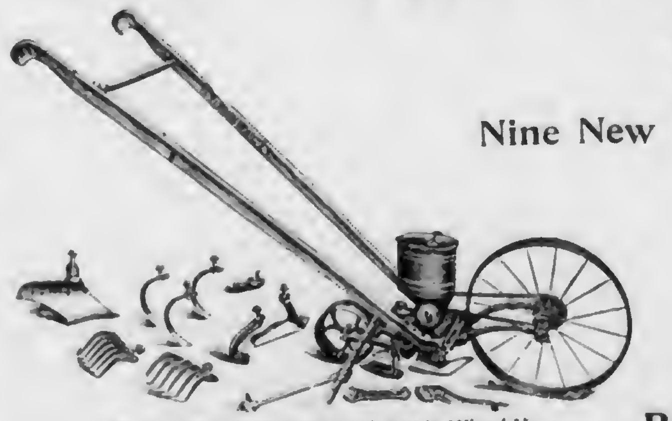
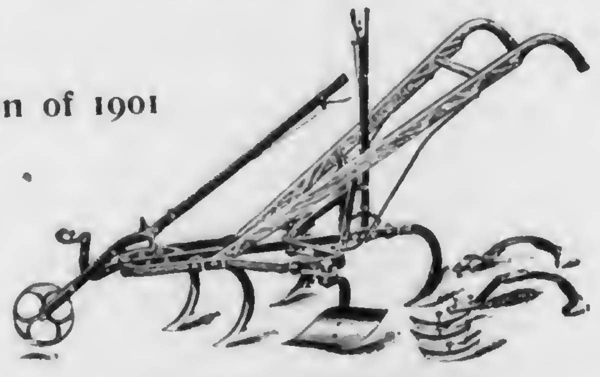
Nine New Tools added to our line for Season of 1901


No. 15 "Iron Age" Combined Single-Wheel Hoe Hill and Drill Seeder.


No. 6 "Iron Age" Combined Horse Hoe and Cultivator.

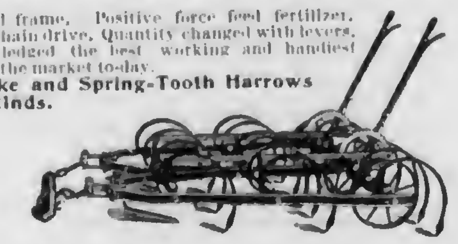
European Agencies, Geo. W. Sillcox, Brussels.
McCormick Harvesting Machine Co., London.
Australasian, Arthur Yates & Co., Sydney.

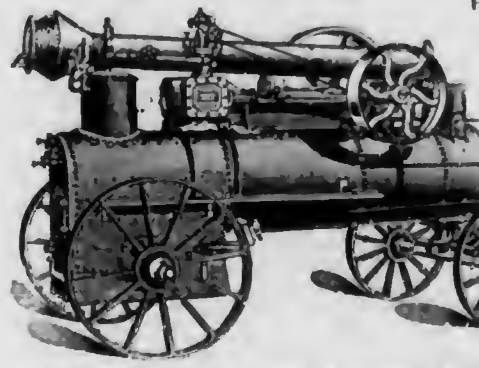
BATEMAN MFG. CO.
Box X, Grenloch, N. J. U. S. A.

Pennsylvania Low-Down Drill.

Steel frame. Positive force feed fertilizer. Center chain drive. Quantity changed with levers. Acknowledged the best working and handiest Drill on the market to-day.

Spike and Spring-Tooth Harrows of all kinds.





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Received medal and highest award at World's Columbian Exposition. Farquhar's threshing engines are the most perfect in use. Have seats, foot brakes and two injectors. Are very strong and durable and are made as light as is consistent with safety. There is no record of a Farquhar boiler ever exploding.

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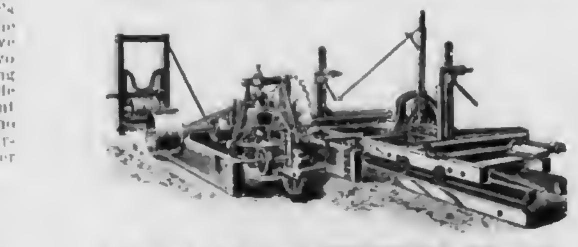
Most accurate set works made. Quick receding head blocks and lightning gig back.



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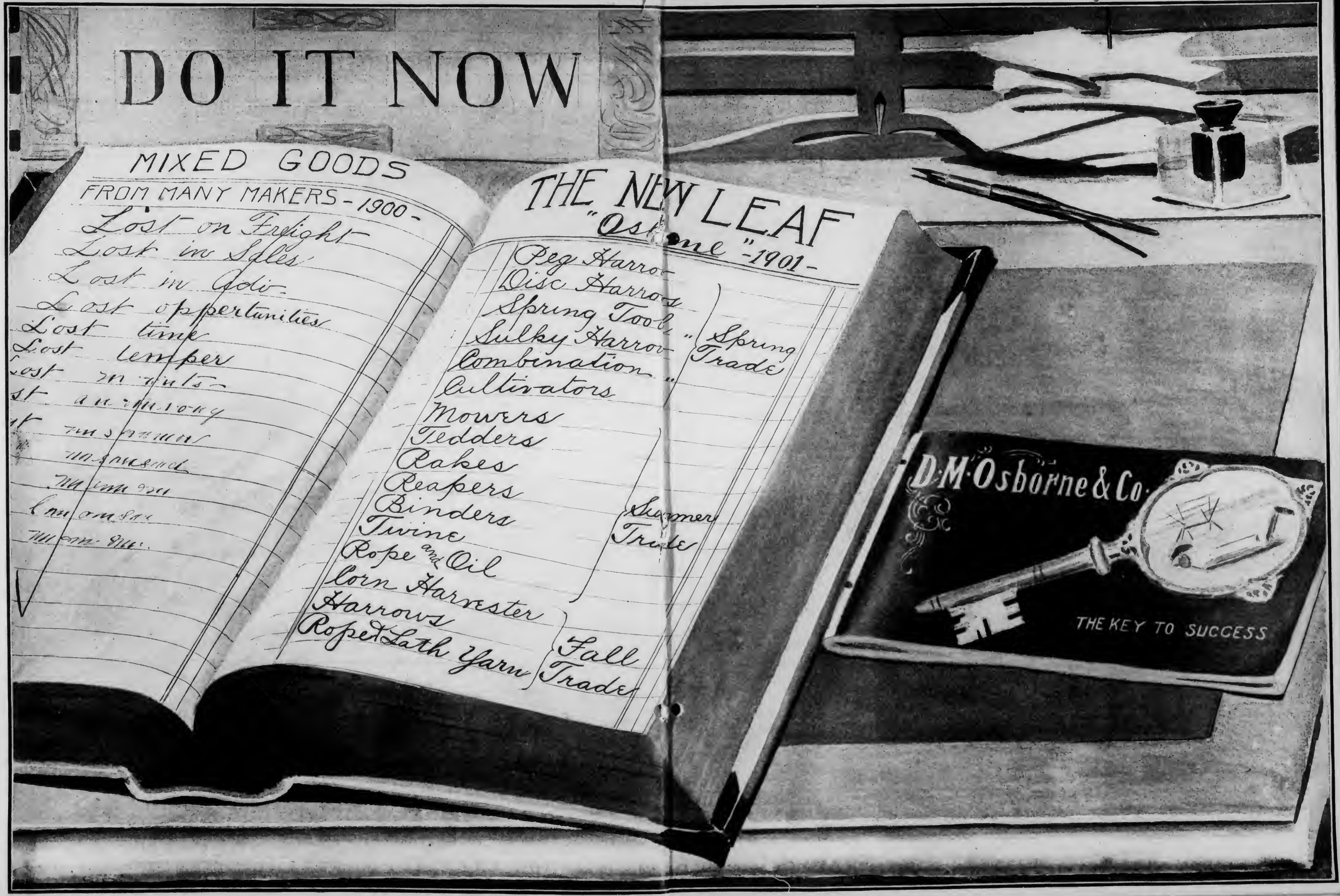
YORK, PENNA., U. S. A.



TIGHT BINDING TEXT CUT OFF

GRAIN AND SEED CLEANING MACHINERY.

Fanning Mills, Clover Hullers, Mill Machinery, Etc.

There are no lines in which more rapid improvement and progress has been made than in those machines and appliances used for separating and cleaning all kinds of grain and seeds. The United States excels in that respect, and her goods are used in every portion of the world where grain is grown.

Every farmer knows that it is important that his grain be cleaned of the seeds, of weeds, chaff, broken grains and other substances, as the price of the grain will be reduced in market according to the lower quality given it by reason of its not being up to the desired grade. Those farmers who can remember the fanning mills of thirty or forty years ago will not forget the disagreeable work of freeing the grain from its hulls or chaff and the clouds of dust that always accompanied such operations. The man who worked near a fanning mill in those days frequently resembled a coal miner, while the air was almost a mass of dust. The fanning mills of the present day have been wonderfully improved since that time. The amount of dust floating in the atmosphere has been reduced to a minimum, all chaff and rubbish is removed from the grains, and chess, smut and cockle are eliminated, as well as all mildewed or imperfect grains. In fact, the grain, whether of wheat, barley, oats, rye or maize, comes from the fanning mill perfectly clean, and the operation is quick and with the least outlay for labor. These mills are made of all sizes desired, are simple in operation, and are constructed of the stronger and best material. Those for export are extra heavy, but the aim of American manufacturers is to not only make them strong and durable and to combine the quality of light running, but also to be operated by hand or one-horse power (or more, if preferred), some of them being so constructed that by suction attachment the dust, chaff and light seeds are carried outside of the building or to some other receptacle. American fanning mills, either for the farm or warehouse, have made a reputation over the whole world, and where they are introduced they become fully established.

Grain-cleaning machinery includes much more than many persons may suppose. There are machines which scour the grain, remove the smut and separate the refuse from that which is clean. There are also the polishers and finishers (having brushes) of various sizes and designs. Machines especially for oat-groats and hominy, and machines for separating oats and other matter, as well as screenings separators, are now brought to perfection, while rolling screens, for removing dust from wheat that has been cleaned, and also for removing sprouts from malt, and for effectually cleaning barley without injury, are used extensively. Metallic substances are instantly removed from wheat, rye, maize, barley, malt, etc., by magnets, while oats are "clipped" with such rapidity as to appear marvelous, as many as 50,000 bushels of oats having been "clipped" by a single machine in one day, though there are, of course, smaller machines for lighter work. Another machine removes the hulls from oats and cleans them, which gives the oats a value greater than the extra cost for labor, while buckwheat cleaning is also included in the work done by many of the machines.

To attempt to enumerate the many machines used in grain cleaning would require a large space. There are machines which wash and dry the wheat; machines for packing bran and feed, packing flour, buckwheat, oatmeal, etc., and for steaming grain, while even rice machines have been so perfected as to make the matter of cleaning and polishing an easy matter. Descriptions of these various machines would be lengthy, but they are used extensively in America, and it is through their aid that America is able to compete in the world's markets with grain and grain products. The countries that expect to oppose her in trade must use the most improved machines for that purpose, and in that respect it will be found that experience in the great grain-growing regions of America has brought forth the fact that the machines made in America cannot be surpassed.

The clover huller is another machine in which the American manufacturer excels. After years of patience and care the clover huller has been improved to the highest degree of excellence. It hulls out the seeds and carefully removes them from the straw (or heads), none remaining, hence all the seed is saved, and the machine does not clog when hulling damp clover, and it is also of light draft. The clover seed is cleaned ready for market, and the work is perfect. The machine is mounted on wheels (if preferred), and special machines are also made for hulling and cleaning alfalfa (lucerne) seed. Considering the fact that clover seeds are exceedingly small, and that it is difficult to secure the seed without great loss, the clover huller and cleaner is a marvel, and the American manufacturer has, by the excellence attained in its construction, largely decreased the cost of the production of seed and relieved the farmer of the tedious methods of separating and cleaning clover seed as practiced in the past.

It is not out of place, also, to call attention to another line in which the United States have reached a front place, and that is in portable mills, stones being used for grinding, and they are capable of grinding up to 100 bushels per hour, being of various sizes and designs. These machines are for various purposes, used mostly for grinding maize, but some designs are for oats, spices, oil meal, etc., all of which are constructed of the strongest materials and have been perfected through years of experience.

The object of this article is to call the attention of foreign dealers to the importance of giving their attention to the American-made fanning-mills, separators, clover-hullers, milling machinery, and the various cleaners, polishers, etc., as they can be handled by dealers with the assurance that they have been tested in a country that has more flouring establishments, and which produces more grain, than any other. In fact, no machine could stand on its reputation for a day in America unless it possessed the highest merits. Not only must it perform thorough work, but it must be light, strong, durable, and have the highest capacity. Any machine that is extensively used in America will satisfy any other country or people.

The packing of these goods for shipment is another point which receives careful attention from American manufacturers, as they are sending their goods to foreign countries at all seasons, and they know what must be done in packing and how to do it.

Full descriptive catalogues will be sent by our manufacturers in any language, and foreign dealers should not hesitate to write. Advertisements of such manufacturers are in this issue of "The Export Implement Age," and they are all reliable and have the highest reputation, being old-established houses that have made their experience their teacher in business.

MORE STEAMSHIP LINES.

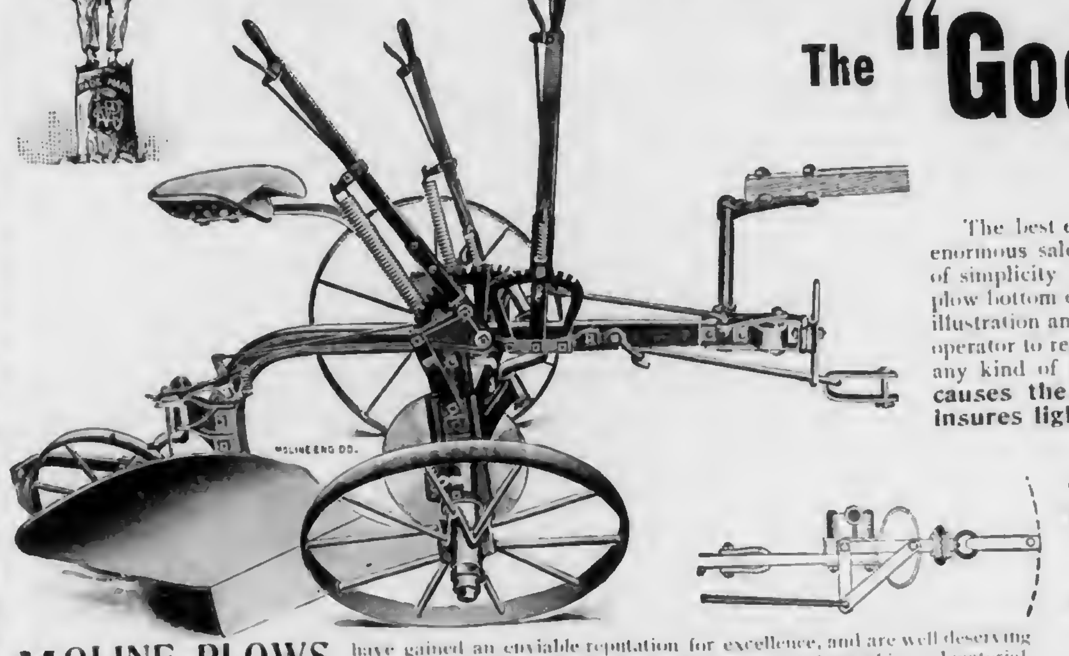
Exporters are much encouraged of late by the energetic action of the Hamburg-American Line, which has made arrangements with the Kosmos Line, of Hamburg, to extend its service around Cape Horn, which consists of twenty-six ocean-going vessels. The arrangement is one for joint traffic. The Hamburg-American Line is also seeking control of the Antwerp-Buenos Ayres Line, which consists of a large fleet of ships. The ultimate purpose of the company is to establish regular communication between the North Sea, the River Plata, around Cape Horn and through the Straits of Magellan to North and South Pacific coast ports. The plan is grand, and involves great advantages to exporters in the United States and importers in the regions referred to. Another interesting announcement for exporting interests is that the Pan-American Line, recently incorporated, will, as soon as they can get ships built or bought, run a weekly line of twin-screw steamers from New York to Manila and China.

There is at present no regular weekly line to China from the Atlantic seaboard. The company has warehouses, docks, tugs and river craft, and will purchase property at Buffalo to handle freight there.

The Ocean Steamship Line, organized at Philadelphia recently, will operate a line of steamers between Southern ports and foreign ports.

Also an express service will be inaugurated between New York and Naples in the early spring at intervals of twenty days. Each ship will have a capacity of over 10,000 tons freight, 1000 steerage passengers and 200 cabin passengers. This service will be of special value to the growing trade between the United States and Italy.

A narrow-gauge railway is to be constructed from Manila through the Batargas province 150 to 200 miles. The Manila and Dagupan road will be extended 90 miles to the north beyond its present terminus, 122 miles. The Government has under consideration the construction of about 200 miles of military railroad. These improvements, while not indicative of immediate advantages to export merchants, indicate that the foundation is being laid for the development of such resources as may be most inviting to foreign capital.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MOLINE PLOW CO.

MOLINE, ILLINOIS, U. S. A.

WALKING AND RIDING PLOWS, PIPE LEVER HARROWS AND DISC HARROWS, CORN DRILLS AND PLANTERS, CORN CULTIVATORS, SUGAR PLOWS AND CULTIVATORS, BEET SEEDERS, CULTIVATORS AND HARVESTERS.

The "Good Enough" Sulky Plow.

("Bastante Bueno")

The best evidence of the value of this plow lies in its great popularity and its enormous sales in the United States and many foreign countries. It is a model of simplicity in design and construction, and can be equipped with any size of plow bottom desired. It is fitted with the new style landing gauge shown in the illustration and detail cut. The great advantage of this device is that it enables the operator to regulate the "landing" of the plow with two, three or four horses in any kind of ground without leaving his seat. **This means of "landing" causes the plow to always travel in the direct line of draft, and insures lighter draft.**

Correspondence from agriculturists and dealers in any part of the world cheerfully and promptly attended to.

We issue Catalogues and Circulars in the English and Spanish languages describing our unrivaled line of Walking and Riding Plows, Harrows, Drills, Cultivators, Etc.

MOLINE PLOWS have gained an enviable reputation for excellence, and are well deserving of this distinction on account of their shape, workmanship and material. The shape and design of each plow is just what it should be to perform its special duties; the workmanship is such as can be attained only by most experienced mechanics, and the material has been made a special study, so that these plows stand as models of excellence.

The above cut shows the U. S. Coffee Huller, Manufactured by the Salem Iron Works, Salem, N.C., U. S. A.

Salem Iron Works Salem, N. C., U.S.A.

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Steam Engines, Saw Mills, Wood Planers, Railroad Cross-Tie Machines, Coffee Hullers, Pulpers, Washers, Dryers, Polishers, Centrifugals, etc.

Complete equipments furnished for Saw Mills and Woodworking Establishments or plants for handling the Coffee Crop.

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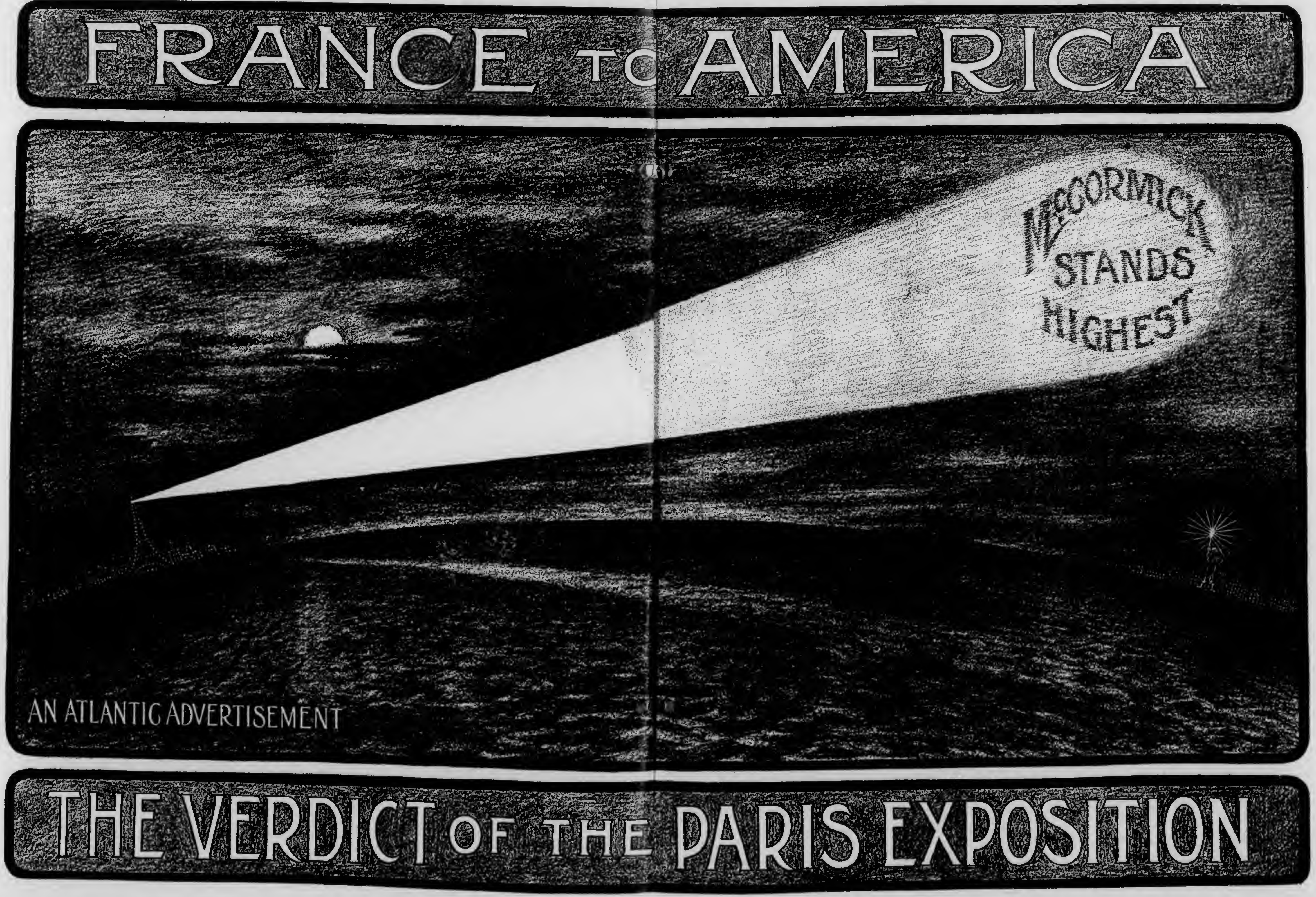
FRANCE TO AMERICA
McCORMICK STANDS HIGHEST
AN ATLANTIC ADVERTISEMENT
THE VERDICT OF THE PARIS EXPOSITION

TIGHT BINDING TEXT CUT OFF

LABOR-SAVING DEVICES.

Some of the Advantages Possessed by the United States.

Mr. Seymour Bell, the British Commercial Agent at Washington, has sent home a report on the labor-saving devices in American factories, for which the United States is so justly famous, and which, of course, have largely been instrumental in enabling our American competitors to make so good a fight with the older nations in the industrial world. Mr. Bell's opinions are given in the London "Commercial Intelligencer," as follows:

Mr. Bell declares that there are three things which are conspicuous, and must strike any one visiting American factories. They are (1) the way in which machinery is used, and all sorts of devices are employed in order to save, wherever possible, manual labor; (2) the division of labor, and (3) the methods employed for handling large quantities of material.

Mr. Bell makes a point of the proper division of labor under skillful management, and gives instances of what can be accomplished under such conditions. He instances a boot factory, employing 400 hands and turning out 3000 pairs of boots a day.

The methods employed for handling large quantities of material have been brought to great perfection in the United States, and Mr. Bell gives an account of the system for handling grain. Over 300,000,000 bushels of flour and grain of all sorts were received and shipped in Chicago during 1899, 85 per cent. being carried by rail and the remainder by water. The grain is shot out of the trucks and carried to the top of the elevators at the rate of 8000 to 15,000 bushels per hour. Vessels are loaded at the rate of 350,000 bushels per day of ten hours, and about 160 railway cars, averaging about 900 bushels each, can be loaded in the same time.

Handling coal is also dealt with in the report. Particulars for one large retail house handling 1100 tons per day are given that afford a fair idea of the usual plan:

The vessels come alongside their wharf in the river, and are discharged by what is known as the "bridge tramway" system. On the quay are traveling piers, to which are fixed arms which project over the vessels' holds. As these arms are hinged to the piers, they may be raised or lowered as required. From the extreme end of the projecting arm is lowered a grab bucket, similar to a Priestman grab, worked by a steam winch and wire rope. The winch is situated on the top of the traveling pier. When the grab fills itself and is hauled up it attaches itself automatically to a small trolley, which runs on rails on or up the projecting arm and discharges itself into hoppers. From here the coal is taken by chain conveyors into the warehouse. It is again taken by other conveyors, when required, to the screeners, and from there loaded onto carts or railway trucks. All the work is done mechanically.

Large iron scrapers or shovels are used in the vessels' holds for bringing the coal to the grabs when the ships are nearly discharged. The scrapers are driven from a separate winch on shore by means of pulleys and ropes led down into the holds. The same apparatus is sometimes used for trimming the coal in the warehouses.

By this system they are able to discharge the vessels at the rate of over 3000 tons in fifteen hours, and at a cost of 1¾ cents, or less than a penny per ton. On this wharf there are seven projecting arms.

The number of men employed in discharging does not exceed twelve, and the total number employed in the whole yard, handling about 1100 tons per day, does not exceed thirty.

Bridge tramway plants and cantilever cranes are very largely used, the report says, and in conclusion some interesting particulars of one of the large American bridge works show what may be done when labor-saving machinery is used whenever possible:

The total number of employes, including the clerical staff, is 850. The quantity of material turned out is, approximately, 40,000 tons per annum. They only make bridges, turntables and similar class of goods. Nothing but open-hearth steel is used. Quality for quality, it comes out cheaper than Bessemer. Here, again, one sees only the most modern machinery, multiple punching machines, drills, etc. The whole of the machinery is driven by electricity. Each of the larger machines has its separate motor. The drilling machines are driven by three motors. One man takes charge of two or three drilling machines. Oil furnaces are used for making and heating rivets, and pneumatic riveters, chippers, etc., are largely used. No stock of bridgework is kept, but every means is used to turn it out rapidly.

The manufacturers supply to the Eastern railroad companies the designs of the bridges that they require, but the Western roads supply their own designs, which of course must be adhered to. The former plan is naturally preferred by the manufacturers, as they can then supply their stock patterns. The general designs of the Western bridges, however, do not vary very much.

PARCELS-POST WITH VENEZUELA.

Postmaster-General Smith has concluded a parcels-post convention with Venezuela, the documents in the case having reached Washington on November 18 with the signature of President Castro, of Venezuela. It is expected that this arrangement will be of the greatest advantage to the trade interests of the United States, enabling merchants to transmit samples and small articles of merchandise speedily and safely. A great volume of trade with Venezuela has been done under such an arrangement by French merchants, and as New York is much nearer than Paris by mail to Venezuela, our merchants should secure a considerable part of this trade. The convention has been an object of diplomatic exchange for several years past. Once it received the signature of President McKinley, but was suspended by one of the periodic Venezuelan revolutions. The agreement became operative on January 1. Parcels exchanged between the United States and Venezuela are limited to 11 pounds in weight, not more than 3 feet 6 inches in length and 6 feet in length and girth combined. The rates of postage are 12 cents per pound or fraction thereof, to be prepaid, and a delivery charge of 10 cents for each package, to be paid by the addressee.

AMERICAN EXPORTS TO GERMANY.

The Treasury Bureau statistics show that the exports of wheat to Germany from the United States in the eleven months ending with November, 1900, amounted to 5,478,330 bushels out of a total exportation of 88,192,462, or 6.2 per cent. of the total exportations of wheat for the eleven months; while the flour exportations to Germany were 631,596 barrels out of a total exportation of 17,066,784 barrels, or 3.7 per cent. of our flour exportations during the eleven months. Turning the flour into wheat at the accepted rate of 4½ bushels per barrel, the total exports of wheat, in its natural state or as flour, to Germany would amount to 8,320,502 out of a total exportation of wheat, in its natural state or as flour, of 164,700,000 bushels, or 5 per cent. of the total in the eleven months ending with November, 1900. A comparison of the wheat and flour exportations to Germany with our total exportations of all articles to that country shows that they form but 3.6 per cent. of the total exports from the United States to Germany. In the eleven months ending with November the value of wheat and flour exported from the United States to Germany was $6,429,725, while our total exports of merchandise to Germany in the same months amounted in value to $179,134,409. Thus Germany in the eleven months ending with November, 1900, has taken 5 per cent. of our exports of wheat and flour, and their value formed but 3.6 per cent. of our total exports to Germany during that time.

Exports from the United States to Germany of agricultural implements formed in eleven months of 1900 nearly $3,000,000, against only a little more than $500,000 in the same months of 1895. Copper amounted in the eleven months of 1900 to over $10,000,000, against a little over $1,000,000 in the same months of 1895. Naval stores and turpentine amounted in the eleven months of 1900 to over $2,500,000, against $1,500,000 in the corresponding months of 1895; oil cake and meal to $4,250,000 and $250,000 in the eleven months of 1900, against $2,000,000 in the eleven months of 1895; mineral oils to over $9,000,000, against $5,500,000 in the same months of 1895; cottonseed oil to more than $1,000,000, against a little over $500,000 in the same months of 1895; builders' hardware to nearly $1,000,000 in the eleven months of 1900, against less than $500,000 in the corresponding period of 1895; sewing machines to nearly $1,000,000 in eleven months of 1900, as compared with a little over $500,000 in 1895, and carriages, cars, etc., to over $500,000, against $63,578 in the corresponding months of 1895.

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EXPORT IMPLEMENT AGE

NUR FÜR'S AUSLAND BESTIMMT.

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ABONNEMENTS-PREIS

Für ein Jahr, portofrei, - - - Mk. 4.25

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Philadelphia, Pa., Vereinigte Staaten von Nord-Amerika.
W. P. NOLAN, Prasident und Director.

Von derselben Verlagsanstalt werden ferner herausgegeben "The Implement Age" und "American Fertilizer."

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Landwirtschaftliche Geräte, die Arbeitsersparnis möglich machen, bringen ihren Kaufpreis in kurzer Zeit wieder ein. Arbeitsparende Geräte kosten eigentlich gar nichts, wenn man die durch ihren Gebrauch erzielte Mehrernte in Betracht zieht.

Dem Landwirte, der seinen Boden bewirtschaftet, liegt nicht viel daran, wer seine Geräte gebaut hat, wenn dieselben nur zufriedenstellen. Der Landwirt sollte keine Einkaufsquelle unbenützt lassen, wenn es sich für ihn um Geräte und Maschinen handelt, die sich für seine besonderen Zwecke am besten eignen.

Das Molkereiwesen nimmt in allen Ländern zu. Der Abrahm-Apparat hat zur Reform dieses Industriezweiges mehr beigetragen als alle anderen Umstände zusammengenommen. Das Molkereiwesen fördert die Schaffung eines Absatzgebietes für landwirtschaftliche Produkte im Inlande.

Dass Wagen amerikanischer Fabrikation in grossem Massstab für Süd-Afrika für Armee-Transporte eingekauft werden, ist ein schlagender Beweis für ihre Vortrefflichkeit. Stark gebaut, dem härtesten Gebrauche gewachsen, und mit den neuesten Verbesserungen ausgestattet, geben dieselben überall die befriedigendsten Resultate.

Den Händlern im Auslande, die sich mit amerikanischen Produkten befassen, dürfte es angenehm sein, zu hören, dass amerikanische Genossenschaften jüngsthin Beschlüsse gefasst haben, die auf Einführung des metrischen Systems und Gründung eines Regulirungs-Bureaus hinzielen; dies ist ein neuer Schritt zur Erreichung der Gleichförmigkeit von Mass- und Gewichtseinheiten im internationalen Handelsverkehr.

Die Fabrikanten in England, Frankreich, Deutschland, Oesterreich, Ungarn und anderen Ländern huldigen dem Fortschritt, was auch von allen Amerikanern zugestanden wird. Die letzteren verlassen sich jedoch auf ihre in der Natur ihres Landes liegenden, unbestreitbaren Vorteile, unter welchen hier ihr Ueberfluss an leicht zugänglichem Rohmaterial und ihre Arbeiter, die besten und geschicktesten der ganzen Welt, Erwähnung finden mögen.

Stahl und Eisen werden mit jedem Jahre mehr zum Bau von Geräten und Maschinen verwendet. Leichtigkeit, Stärke, Dauerhaftigkeit und Arbeitsleistung erscheinen hierdurch gesichert. Hölzerne Geräte sind plump und schwer und daher dem fortschrittlichen Landwirt der Neuzeit nicht länger erwünscht.

Das EXPORT IMPLEMENT AGE ist dazu bestimmt, Aufklärung über amerikanische landwirtschaftliche Geräte, Maschinen und Fuhrwerke zu geben und zu verbreiten, ohne deshalb die in anderen Ländern gebauten Fabrikate herabzusetzen. Es ist der Ansicht, dass ehrenhaftes und rechtmässiges Vorgehen mächtiger ist als direkte Anfeindung.

Europäische Landwirte können Geräte und Maschinen fast ebenso rasch aus den Vereinigten Staaten von Nordamerika beziehen wie der amerikanische Landwirt. Die Vereinigten Staaten von Nordamerika umfassen ein ungeheueres Landgebiet, doch verkleinern Eisenbahnen und Dampfschiffahrt alle Entfernungen und erleichtern den Handelsverkehr mit anderen Ländern.

Unsere Leser in Europa dürfte die Nachricht interessiren, dass gegenwärtig die Vereinigten Staaten von Nordamerika im Weltexporthandel an der Spitze stehen und hierin sogar England überlegen sind. Die Ausfuhr während elf Monaten des Jahres 1900 belief sich laut amtlichen Feststellungen für die Vereinigten Staaten auf 1,308,913,789 Dollar, für Grossbritannien dahingegen nur auf 1,303,440,000 Dollar.

Niemand weiss besser, welche Schwierigkeiten der weiteren Verbreitung amerikanischer Geräte und Maschinen in fremden Ländern im Wege stehen, als die ausländischen Gerätehändler. Trotz dieser Schwierigkeiten zeigt sich hierin ein wunderbarer Fortschritt. Die am Exporthandel interessirten Vereine für Handel und Industrie beschäftigen sich mit Plänen, die die Entfernung der einer Ausbreitung des Welthandels entgegenwirkenden Hinderdisse ins Auge fassen, wozu unter anderem bessere und mehr unmittelbare Transporteinrichtungen, eine den Handelsinteressen mehr entsprechende Aenderung der Frachtbriefe u. s. w. in Vorschlag gebracht werden. Die Vereinigten Staaten von Nord-Amerika hatten mehr als ein Jahrhundert lang lediglich mit ihrer eigenen Entwicklung zu rechnen, und erst seit etwa einem Vierteljahrhundert hat sich ihre Aufmerksamkeit mehr und mehr dem Welthandel zugewendet, während andere Nationen sich während ihrer ganzen Existenz um denselben beworben haben. Es ist daher keineswegs befremdend, dazs die Industriellen der Vereinigten Staaten von Nord-Amerika denn auch herausfinden, dass sie im Stande sind, alle Nationen mit dem Nötigen zu versehen. Wer mit dem amerikanischen Nationalcharakter vertraut ist, kann darauf rechnen, dass die Befreiung des Handels nicht lange auf sich warten lassen wird. Schiffe, Banken, Packetpost, Handelsverträge, Waarenhäuser, Agenturen, Fachblätter, alle werden geschaffen werden und an dem grossartigen Werke teilnehmen, die Vereinigten Staaten von Nord-Amerika in ihrem Wettkampf mit den anderen Nationen der Erde zur Erwerbung des ihnen gebührenden Anteils am Welthandel auf gleichen Fuss zu stellen.

Amerikanische Geräte und Maschinen werden in der Absicht exportirt, um mit den Fabrikaten fremder Länder in Koncurrenz zu treten und nicht nur ihre manigfaltigen Vorzüge darzuthun, sondern auch auf dem Felde praktischen Proben unterzogen zu werden, zu denen an alle Landwirte Einladungen ausgehen. Durch den Gebrauch von Geräten oder Maschinen sollten Landwirt, Agent und Fabrikant gleichen Vorteil finden.

Der amerikanische Cultivator hat einen hohen Grad mechanischer Vollkommenheit erreicht und wird gegenwärtig zu einem Preise geliefert, der beinahe alle Hindernisse aus dem Weg räumt, die bisher seiner Einführung im Ausland ungünstig gegenüberstanden. Anfangs wollte der europäische Landwirt nichts davon hören; doch dies ist lange her. Der Ruf, den sich der Cultivator erwarb, ebnete bald den Weg zu seiner allgemeinen Verwendung. Die amerikanischen Fabrikanten liessen es jedoch nicht dabei bewenden, den Cultivator einfach so zu lassen, wie er war. Wer der Ansicht ist, über dieses Gerät nichts Neues mehr erfahren zu können, dürfte es lohnend finden, hierüber mit einigen der bestbekannten Fabrikanten, deren Namen in diesem Blatt zu finden sind, in Korrespondenz zu treten.

Wenn eine Maschine anfängt, Spuren der Abnützung zu zeigen, wird erst ihr wahrer Wert erkennbar. Im Anfang ihrer Verwendung befinden sich alle Geräte und Maschinen im besten Zustande; sobald jedoch die Periode der Reparaturen, Brüche und gänzlichen Abnützung einzelner Teile eintritt, muss der Landwirt genauere Einsicht nehmen. Bei nach wissenschaftlichen Grundsätzen gebauten Maschinen nützen sich alle Bestandteile in vollkommen gleichem Maasse ab. Wozu nützt eine Maschine, die zehn Jahre dauern sollte, wenn sie in Folge irgend eines leicht vermeidlichen Fehlers schon nach drei Jahren geflickt und ausgebessert werden muss? Ein charakteristischer Vorzug amerikanischer Geräte und Maschinen liegt darin, dass sie in allen Teilen durchaus gleichartig gebaut sind. Alle ihre Bestandteile korrespondiren vollständig und greifen harmonisch ineinander ein. Die Reibung ist auf ein Minimum herabgebracht; keine unnötige oder unvermeidliche Zerrung existirt. Jeder einzelne Bestandteil hat nicht mehr zu leisten, als was ihm von Rechts wegen zufällt, und nützt sich daher nicht rascher ab, als ein anderer, so dass die Maschine selbst nach langer Dienstzeit eigentlich noch immer neu ist. Sie fährt fort, ihre Arbeit zu leisten, und jede einzelne in Europa verwendete Maschine bestätigt dies. Dieser Umstand, die Dauerhaftigkeit der Maschine, ist von weit grösserer Bedeutung als ein etwaiger Unterschied im Ankaufspreis. Der wahre Wert eines Gerätes steht in geradem Verhältnis zu der Länge der Zeit, während welcher es zufriedenstellende Arbeit zu leisten im Stand ist. Dieser Umstand wird von Allen, die sich mit dem Verkauf amerikanischer Geräte und Maschinen befassen, nicht immer gebührend beachtet. Manchmal nützt sich eine Maschine gänzlich ab, und der Besitzer vergisst ganz daran, nachzurechnen, wie lange sie eigentlich Dienste gethan hat. Nach dem Maassstab der Dauerhaftigkeit beurteilt, braucht die amerikanische Maschine keine Konkurrenz zu fürchten.

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LABOR-SAVING DEVICES.

Some of the Advantages Possessed by the United States.

Mr. Seymour Bell, the British Commercial Agent at Washington, has sent home a report on the labor-saving devices in American factories, for which the United States is so justly famous, and which, of course, have largely been instrumental in enabling our American competitors to make so good a fight with the older nations in the industrial world. Mr. Bell's opinions are given in the London "Commercial Intelligencer," as follows:

Mr. Bell declares that there are three things which are conspicuous, and must strike any one visiting American factories. They are (1) the way in which machinery is used, and all sorts of devices are employed in order to save, wherever possible, manual labor; (2) the division of labor, and (3) the methods employed for handling large quantities of material.

Mr. Bell makes a point of the proper division of labor under skillful management, and gives instances of what can be accomplished under such conditions. He instances a boot factory, employing 400 hands and turning out 3000 pairs of boots a day.

The methods employed for handling large quantities of material have been brought to great perfection in the United States, and Mr. Bell gives an account of the system for handling grain. Over 300,000,000 bushels of flour and grain of all sorts were received and shipped in Chicago during 1899, 85 per cent. being carried by rail and the remainder by water. The grain is shot out of the trucks and carried to the top of the elevators at the rate of 8000 to 15,000 bushels per hour. Vessels are loaded at the rate of 350,000 bushels per day of ten hours, and about 160 railway cars, averaging about 900 bushels each, can be loaded in the same time.

Handling coal is also dealt with in the report. Particulars for one large retail house handling 1100 tons per day are given that afford a fair idea of the usual plan:

The vessels come alongside their wharf in the river, and are discharged by what is known as the "bridge tramway" system. On the quay are traveling piers, to which are fixed arms which project over the vessels' holds. As these arms are hinged to the piers, they may be raised or lowered as required. From the extreme end of the projecting arm is lowered a grab bucket, similar to a Priestman grab, worked by a steam winch and wire rope. The winch is situated on the top of the traveling pier. When the grab fills itself and is hauled up it attaches itself automatically to a small trolley, which runs on rails on or up the projecting arm and discharges itself into hoppers. From here the coal is taken by chain conveyors into the warehouse. It is again taken by other conveyors, when required, to the screeners, and from there loaded onto carts or railway trucks. All the work is done mechanically.

Large iron scrapers or shovels are used in the vessels' holds for bringing the coal to the grabs when the ships are nearly discharged. The scrapers are driven from a separate winch on shore by means of pulleys and ropes led down into the holds. The same apparatus is sometimes used for trimming the coal in the warehouses.

By this system they are able to discharge the vessels at the rate of over 3000 tons in fifteen hours, and at a cost of 1¾ cents, or less than a penny per ton. On this wharf there are seven projecting arms.

The number of men employed in discharging does not exceed twelve, and the total number employed in the whole yard, handling about 1100 tons per day, does not exceed thirty.

Bridge tramway plants and cantilever cranes are very largely used, the report says, and in conclusion some interesting particulars of one of the large American bridge works show what may be done when labor-saving machinery is used whenever possible:

The total number of employes, including the clerical staff, is 850. The quantity of material turned out is, approximately, 40,000 tons per annum. They only make bridges, turntables and similar class of goods. Nothing but open-hearth steel is used. Quality for quality, it comes out cheaper than Bessemer. Here, again, one sees only the most modern machinery, multiple punching machines, drills, etc. The whole of the machinery is driven by electricity. Each of the larger machines has its separate motor. The drilling machines are driven by three motors. One man takes charge of two or three drilling machines. Oil furnaces are used for making and heating rivets, and pneumatic riveters, chippers, etc., are largely used. No stock of bridgework is kept, but every means is used to turn it out rapidly.

The manufacturers supply to the Eastern railroad companies the designs of the bridges that they require, but the Western roads supply their own designs, which of course must be adhered to. The former plan is naturally preferred by the manufacturers, as they can then supply their stock patterns. The general designs of the Western bridges, however, do not vary very much.

PARCELS-POST WITH VENEZUELA.

Postmaster-General Smith has concluded a parcels-post convention with Venezuela, the documents in the case having reached Washington on November 18 with the signature of President Castro, of Venezuela. It is expected that this arrangement will be of the greatest advantage to the trade interests of the United States, enabling merchants to transmit samples and small articles of merchandise speedily and safely. A great volume of trade with Venezuela has been done under such an arrangement by French merchants, and as New York is much nearer than Paris by mail to Venezuela, our merchants should secure a considerable part of this trade. The convention has been an object of diplomatic exchange for several years past. Once it received the signature of President McKinley, but was suspended by one of the periodic Venezuelan revolutions. The agreement became operative on January 1. Parcels exchanged between the United States and Venezuela are limited to 11 pounds in weight, not more than 3 feet 6 inches in length and 6 feet in length and girth combined. The rates of postage are 12 cents per pound or fraction thereof, to be prepaid, and a delivery charge of 10 cents for each package, to be paid by the addressee.

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Niemand weiss besser, welche Schwierigkeiten der weiteren Verbreitung amerikanischer Geräte und Maschinen in fremden Ländern im Wege stehen, als die ausländischen Gerätehändler. Trotz dieser Schwierigkeiten zeigt sich hierin ein wunderbarer Fortschritt. Die am Exporthandel interessirten Vereine für Handel und Industrie beschäftigen sich mit Plänen, die die Entfernung der einer Ausbreitung des Welthandels entgegenwirkenden Hinderdisse ins Auge fassen, wozu unter anderem bessere und mehr unmittelbare Transporteinrichtungen, eine den Handelsinteressen mehr entsprechende Aenderung der Frachtbriefe u. s. w. in Vorschlag gebracht werden. Die Vereinigten Staaten von Nord-Amerika hatten mehr als ein Jahrhundert lang lediglich mit ihrer eigenen Entwicklung zu rechnen, und erst seit etwa einem Vierteljahrhundert hat sich ihre Aufmerksamkeit mehr und mehr dem Welthandel zugewendet, während andere Nationen sich während ihrer ganzen Existenz um denselben beworben haben. Es ist daher keineswegs befremdend, dazs die Industriellen der Vereinigten Staaten von Nord-Amerika denn auch herausfinden, dass sie im Stande sind, alle Nationen mit dem Nötigen zu versehen. Wer mit dem amerikanischen Nationalcharakter vertraut ist, kann darauf rechnen, dass die Befreiung des Handels nicht lange auf sich warten lassen wird. Schiffe, Banken, Packetpost, Handelsverträge, Waarenhäuser, Agenturen, Fachblätter, alle werden geschaffen werden und an dem grossartigen Werke teilnehmen, die Vereinigten Staaten von Nord-Amerika in ihrem Wettkampf mit den anderen Nationen der Erde zur Erwerbung des ihnen gebührenden Anteils am Welthandel auf gleichen Fuss zu stellen.

Amerikanische Geräte und Maschinen werden in der Absicht exportirt, um mit den Fabrikaten fremder Länder in Concurrenz zu treten und nicht nur ihre manigfaltigen Vorzüge darzuthun, sondern auch auf dem Felde praktischen Proben unterzogen zu werden, zu denen an alle Landwirte Einladungen ausgehen. Durch den Gebrauch von Geräten oder Maschinen sollten Landwirt, Agent und Fabrikant gleichen Vorteil finden.

Der amerikanische Cultivator hat einen hohen Grad mechanischer Vollkommenheit erreicht und wird gegenwärtig zu einem Preise geliefert, der beinahe alle Hindernisse aus dem Weg räumt, die bisher seiner Einführung im Ausland ungünstig gegenüberstanden. Anfangs wollte der europäische Landwirt nichts davon hören; doch dies ist lange her. Der Ruf, den sich der Cultivator erwarb, ebnete bald den Weg zu seiner allgemeinen Verwendung. Die amerikanischen Fabrikanten liessen es jedoch nicht dabei bewenden, den Cultivator einfach so zu lassen, wie er war. Wer der Ansicht ist, über dieses Gerät nichts Neues mehr erfahren zu können, dürfte es lohnend finden, hierüber mit einigen der bestbekannten Fabrikanten, deren Namen in diesem Blatt zu finden sind, in Korrespondenz zu treten.

Wenn eine Maschine anfängt, Spuren der Abnützung zu zeigen, wird erst ihr wahrer Wert erkennbar. Im Anfang ihrer Verwendung befinden sich alle Geräte und Maschinen im besten Zustande; sobald jedoch die Periode der Reparaturen, Brüche und gänzlichen Abnützung einzelner Teile eintritt, muss der Landwirt genauere Einsicht nehmen. Bei nach wissenschaftlichen Grundsätzen gebauten Maschinen nützen sich alle Bestandteile in vollkommen gleichem Maasse ab. Wozu nützt eine Maschine, die zehn Jahre dauern sollte, wenn sie in Folge irgend eines leicht vermeidlichen Fehlers schon nach drei Jahren geflickt und ausgebessert werden muss? Ein charakteristischer Vorzug amerikanischer Geräte und Maschinen liegt darin, dass sie in allen Teilen durchaus gleichartig gebaut sind. Alle ihre Bestandteile korrespondiren vollständig und greifen harmonisch ineinander ein. Die Reibung ist auf ein Minimum herabgebracht; keine unnötige oder unvermeidliche Zerrung existirt. Jeder einzelne Bestandteil hat nicht mehr zu leisten, als was ihm von Rechts wegen zufällt, und nützt sich daher nicht rascher ab, als ein anderer, so dass die Maschine selbst nach langer Dienstzeit eigentlich noch immer neu ist. Sie fährt fort, ihre Arbeit zu leisten, und jede einzelne in Europa verwendete Maschine bestätigt dies. Dieser Umstand, die Dauerhaftigkeit der Maschine, ist von weit grösserer Bedeutung als ein etwaiger Unterschied im Ankaufspreis. Der wahre Wert eines Gerätes steht in geradem Verhältnis zu der Länge der Zeit, während welcher es zufriedenstellende Arbeit zu leisten im Stand ist. Dieser Umstand wird von Allen, die sich mit dem Verkauf amerikanischer Geräte und Maschinen befassen, nicht immer gebührend beachtet. Manchmal nützt sich eine Maschine gänzlich ab, und der Besitzer vergisst ganz daran, nachzurechnen, wie lange sie eigentlich Dienste gethan hat. Nach dem Maassstab der Dauerhaftigkeit beurteilt, braucht die amerikanische Maschine keine Konkurrenz zu fürchten.

INTENTIONAL SECOND EXPOSURE

GETREIDE- UND SAMEN-REINIGUNGS-APPARATE—KLEESAMENENTHÜLSER—MAHLAPPARATE ETC.

Auf keinem Gebiete macht sich ein rascherer Fortschritt und eine gründlichere Verbesserung geltend als bei den zum Sortiren und Reinigen aller Arten von Getreide und Samen verwendeten Maschinen und Apparaten der Fall ist. Die Vereinigten Staaten von Nord-Amerika nehmen auf diesem Gebiete eine hervorragende Stelle ein, und ihre Fabrikate werden in allen Teilen der Welt angefunden, wo Getreide gebaut wird.

Ein jeder Landwirt kennt die grosse Wichtigkeit, die der Reinigung des Getreides von Unkrautsamen, Spreu, gebrochenen Körnern und anderen Substanzen beizumessen ist, da ja der Marktpreis des Getreides fällt, sobald dasselbe nicht den an ihn diesbezüglich gestellten Anforderungen entspricht. Landwirte, die sich der vor dreissig bis vierzig Jahren üblichen Putzmühlen noch zu entsinnen vermögen, dürften die unangenehme Arbeit der Entfernung von Hülsen und Spreu und die dieselbe begleitenden Wolken von Staub nicht leicht vergessen. Der in jener Zeit bei einer Putzmühle beschäftigte Arbeiter sah oft wie ein Kohlengräber aus, während die Luft mit Staubmassen gefüllt war. Die heute in Gebrauch stehenden Putzmühlen sind seitdem ganz wunderbar vervollkommnet worden. Der in der Luft schwebende Staub ist auf ein Minimum reduzirt, Spreu und Erde werden vollständig abgeschieden, und Flugbrand, Schmutz und Rade werden gleichzeitig mit etwa verschimmelten oder unvollkommenen Körnern entfernt. Mit einem Worte, die Weizen-, Gersten-, Hafer-, Roggen- oder Maiskörner verlassen die Putzmühle vollkommen rein, und die Arbeit wird rasch und mit möglichst geringen Kosten ausgeführt. Diese Putzmühlen werden in allen gewünschten Grössen geliefert, sind von einfachem Betriebe, und aus stärkstem und bestem Material gebaut. Die für den Export bestimmten sind ganz besonders stark, doch stellt sich der amerikanische Fabrikant nicht nur die Aufgabe, sie stark und dauerhaft und leicht arbeitend, sondern auch für Hand- oder einspännigen Göppelbetrieb geeignet zu bauen; einige derselben besitzen eine Saugvorrichtung, die Staub, Spreu und zu leichte Samen aus dem Speicher hinaus oder nach einem besonderen Behälter schafft. Die amerikanischen Putzmühlen für Landgüter oder Magazine besitzen einen Weltruf und bürgern sich überall, wo sie erst einmal eingeführt worden sind, auch schnell ein.

Getreide-Reinigungsapparate vereinigen weit mehr in sich, als Viele annehmen. Es giebt Maschinen, die das Getreide abreiben, allen Schmutz entfernen und den Ausschuss von den reinen Körnern absondern. Ferner giebt es mit Bürsten versehene Polir- und Glättmaschinen in verschiedenen Grössen und Modellen; und Specialmaschinen für Kleinhafer und Grütze, zum Ausscheiden von Hafer und anderen Samen, sowie Separatoren mit Schüttelböden werden gegenwärtig vervollkommnet, während rotirende Siebe zum Abstäuben gereinigten Weizens und zur Entfernung der Keime aus Malz, sowie zum Reinigen von Gerste, ohne letztere zu beschädigen, in ausgedehntem Maasse bereits zur Anwendung gelangen. Metallische Substanzen werden durch Magnete augenblicklich aus Weizen, Gerste, Roggen, Mais, Malz etc. ausgeschieden, und Hafer mit wunderbar erscheinender Geschwindigkeit "gestutzt," wobei eine einzelne Maschine in einem Tage 50,000 Bushel "stutzen" kann; doch giebt es natürlich auch kleinere Maschinen mit geringerer Arbeitsleistung. Eine andere Maschine entfernt die Hülsen aus dem Hafer und reinigt denselben, was ihm einen Wert verleiht, der die Extra-Auslage für Arbeit mehr als aufwiegt. Das Reinigen des Buchweizens ist ebenfalls in der Arbeitsfähigkeil vieler dieser Maschinen inbegriffen.

Der Versuch, eine Aufzählung der vielen zur Reinigung von Getreide verwendeten Apparate vorzunehmen, würde sehr viel Raum beanspruchen. Es giebt Apparate zum Waschen und Trocknen des Weizens, Apparate zum Pressen von Kleie und Futter, Apparate die Mehl, Buchweizen, Haferschrot u. s. w. pressen, sowie auch Apparate zum Dämpfen von Getreide, während sogar Reismaschinen derart vervollkommnet worden sind, dass die Arbeit des Reinigens und Polirens nunmehr geradezu spielend leicht geworden ist. Eine Beschreibung aller dieser verschiedenen Apparate würde zu weit führen; doch stehen sie alle in Amerika in ausgedehntem Maasse in Verwendung, und ihrer Mithilfe ist es zu danken, dass Amerika auf dem Weltmarkte in Getreide und Getreideprodukten konkurriren kann. Länder, die Amerika im Welthandel entgegentreten wollen, müssen zu diesem Zwecke die besten Maschinen und Apparate verwenden: es hat sich in der That durch längere Erfahrung in den grossen getreidebauenden Distrikten Amerikas gezeigt, dass die in Amerika gebauten Maschinen unübertrefflich sind.

Der Kleesamen-Enthülser ist ebenfalls ein Apparat, in der die amerikanischen Fabriken Ausgezeichnetes leisten. Nach Jahren der Ausdauer und Sorgfalt befindet sich der Kleesamen-Enthülser heute auf der höchsten Stufe der Vollkommenheit. Derselbe enthülst die Samen und sondert sie sorgfältig von dem Stroh (oder den Köpfen) ab, so dass nichts davon zurückbleibt, wodurch denn auch aller Samen vollständig gewonnen wird; die Maschine verstopft sich nicht beim Enthülsen feuchten Samenklees, und kann auch leicht von einem Orte zum anderen transportirt werden. Der Kleesamen wird marktfertig geliefert und die Leistung ist eine vollkommene. Die Maschine wird (auf speziellen Wunsch) auch auf Rädern montirt, und besondere Apparate dienen zum Reinigen von Alfalfa (Luzern) Samens. In Betrachtziehung des Umstandes, dass Kleesamen sehr klein und ohne grossen Verlust nur schwer zu behandeln ist, erscheint der Kleesamenenthülser und Reiniger ein wahres Wunder; dieses amerikanische Fabrikat hat durch die Vortrefflichkeit seiner Konstruktion die Produktionskosten des Samens bedeutend herabgesetzt, und befreit den Landwirt von den langen und zeitraubenden Arbeiten des Absonderns und Reinigens des Kleesamens nach den alten Methoden.

Es dürfte hier auch am Platze sein, die Aufmerksamkeit unserer Leser auch noch auf ein verwandtes Gebiet zu lenken, auf dem die Vereinigten Staaten von Nord-Amerika den ersten Rang einnehmen, und zwar auf die tragbaren Mühlen mit Mahlsteinen, die bis zu 100 Bushel per Stunde mahlen können und in verschiedenen Grössen und Modellen geliefert werden. Dieselben dienen verschiedenen Zwecken zum Mahlen von Hafer, Gewürzen, Oelkuchen u. s. w.; sie sind alle alle aus dem stärksten Material hergestellt und durch jahrelange Erfahrung vervollkommt.

Der Zweck dieses Artikels ist, die Aufmerksamkeit der Händler im Auslande auf die in Amerika gebauten Putzmühlen, Separatoren, Kleesamenenthülser, Maschinmühlen und die diversen Reiniger, Glätter u. s. w. zu lenken, deren Vertrieb Wiederverkäufer mit der Beruhigung übernehmen können, dass sie in einem Lande ausprobirt worden sind, das mehr Getreidemühlen besitzt und mehr Getreide produzirt, als alle anderen Länder. In der That könnte sich in Amerika keine Maschine auch nur für einen Tag einen Ruf erringen, wenn sie nicht effektiv die grössten Vorzüge besässe. Sie muss nicht nur vollkommene Arbeit liefern, sondern auch leicht, stark, dauerhaft und höchst leistungsfähig sein. Eine Maschine, die in Amerika ausgedehnte Verwendung findet, muss notgedrungen alle anderen Länder oder Völker zufriedenstellen.

Die Verpackung dieser Maschinen für den Transport ist ein anderer Punkt, der seitens der amerikanischen Fabrikanten sorgfältige Beachtung findet, da sie ihre Produkte nach fremden Ländern senden, sich der Wichtigkeit guter Packung wohl bewusst sind und die betreffende Packungsverfahren auch gründlich kennen. Ausführliche Kataloge werden in allen Sprachen gedruckt und versendet, und die Händler im Auslande sollten sich dieselben alle kommen lassen. In der gegenwärtigen Nummer des "Export Implement Age" finden sich Annoncen von zuverlässigen Fabrikanten, die sich des allerbesten Rufes erfreuen; es sind altetablirte Firmen, die aus langjähriger Erfahrung Lehre gezogen haben.

Kaufleuten, Importeuren und Exporteuren der ganzen Welt wird die Nachricht willkommen sein, dass der Geldvorrat der Welt innerhalb drei Jahren von 4,000 Millionen auf 11,000 Millionen, also auf nahezu das Dreifache gestiegen ist. Die Bedeutung dieses Umstandes liegt darin, dass ein viel grösserer Geschäftsverkehr möglich und auch thatsächlich erreicht wird. Die grosse Aufgabe, der die Welt gegenübersteht, liegt nicht in der Entwickelung einer gewaltigen Seemacht, der Beibehaltung stehender Heere oder der Anlage ausgedehnter militärischer Befestigungen, sondern in der Vermehrung des Waaren- und Geldvorrates der Welt. In Wirklichkeit wird diesem Umstande keine so weitgehende Bedeutung beigemessen als seiner ökonomischen Wichtigkeit nach zu erwarten wäre. Die Welt ist eben noch nicht völlig aus ihrem Stadium unwissenschaftlicher Ideen herausgetreten. Weitgehendes Verständnis ist noch immer nicht die Grundlage ihrer Handlungsweise und ihres Wirkens. Die Nationen kämpfen um den Besitz des Goldes, das möglicherweise zu Kriegszwecken verwendet wird. Was aber eigentlich in Angriff genommen werden sollte, ist nicht die Schaffung zerstörender Kräfte sondern die Geldproduktion, die den nur halbentwickelten Fähigkeiten der vorgeschrittenen Nationen zur vollen Entwicklung verhilft und die verborgenen und unentwickelten Kräfte der primitiveren Völker zum Eintritt in den Kampf für intellektuellen und physischen Fortschritt anfacht.

Die Anwendung landwirtschaftlicher Geräte und Maschinen nimmt mit jedem Jahre zu. Dies ist wahrscheinlich dem Umstande zuzuschreiben, dass die Agrikultur jedes Jahr grössere Flächen Landes erobert.

DIE LEAN'SCHEN EGGEN.

Die Firma The Roderick Lean Manufacturing Company, Mansfield, Ohio, Vereinigte Staaten von Nord-Amerika, ist eine der grössten und bedeutendsten Eggenfabriken der Welt. Eggen sind die Specialität dieser Firma und auf den Weltausstellungen von Chicago und Omaha hat sie die höchsten Auszeichnungen für diese Fabrikate davongetragen.

Die ganz aus Stahl gefertigte Lean'sche Egge steht überall in den Vereinigten Staaten von Nord-Amerika, sowie auch im Auslande in Gebrauch. Seit bereits 25 Jahren fertigt die Fabrik ausschliesslich Eggen an, und die Ingenieure dieser Firma besitzen daher sowohl im Gebrauch und Zweck der Eggen, als auch in allen an ein vollendetes Gerät dieser Art gestellten Anforderungen grosse Erfahrung.

Die Lean'sche Egge ist ganz aus Stahl gebaut, wodurch Leichtigkeit, Stärke und Dauerhaftigkeit erzielt wird. Sie thut ihre Arbeit gründlich und mit geringstem Kraftaufwande. Amerikanische Landwirte ziehen ein leichtes, ein- oder zweispänniges Gerät den schweren, vierspännigen Maschinen vor, und die Landwirte anderer Länder beginnen bereits herauszufinden, dass, wenn sie mit dem amerikanischen Landwirte konkurriren wollen, sie die amerikanische Methode, arbeitstüchtige und arbeitsparende Geräte zu verwenden, annehmen müssen. Da die Lean'sche Egge ganz aus Stahl ist, kommen an ihr keine gegossenen oder schmiedeisernen Teile vor, und da sie ausserdem aus weniger Stücken zusammengesetzt ist als viele andere, so ist sie auch dem Bruche weniger ausgesetzt.

Sie ist nach dem Zickzackprinzipe gebaut, d. h. der Zug des Gespannes findet vom Mittelpunkte aus statt, und die einzelnen Sektionen passen sich den Unebenheiten des Bodens von selbst an. Beim Eggen junger Saaten, wie Mais, Weizen, Kartoffeln, künstlichen Wiesen u. s. w. macht sich ihr Kaufpreis in einer einzigen Kampagne bezahlt.

Die Lean'sche Egge lässt sich durch einen Hebel leicht und rasch lenken; dieser Hebel ist so angebracht, dass alle nötigen Stellungen ohne Beschädigung des Geräts erzielt werden können. Die Egge wird durch einen alle Sektionen umgebenden Stahlrahmen zusammengehalten. Die Zahnstangen sind an den Enden abgerundet und verstärkt, und wenn die Winkelklammern angezogen sind, werden die verstärkten Enden der Zahnstangen gegen die Seitenstangen gehoben und müssen diese Stellung daher beibehalten. Alle Zähne befinden sich an der Innenseite, und da der Rahmen unbeweglich ist, können sie unmöglich furchen. Es ist dies ein wichtiger Punkt, der nicht ausser Acht zu lassen ist.

Die Zähne sind rautenförmig; sie sind geschmiedet und gehärtet, dauern Jahre lang und sind am Einsatz in die Stange quadratförmig und verstärkt. Die Schraubenmuttern haben an der Unterseite eine Krone, die genau zwischen die Rippen der Stahlstange passt, und wenn sie angezogen sind, sitzen die Zähne vollkommen fest. Letztere können leicht umgedreht und entfernt werden.

Keine Egge sollte unnötig beschwert werden. Eine schwere Egge dringt in lockerem Boden tief ein, während eine leichtere mehr Vibration besitzt, dem Anfüllen mit Abfall weniger ausgesetzt und im Pulverisiren des Bodens unübertrefflich ist.

Behufs näherer Auskunft über diese berühmten Eggen steht das Circular der Firma, The Roderick Lean Manufacturing Company, Mansfield Ohio, Vereinigte Staaten von Nord-Amerika, auf Verlangen gratis und franko zu Diensten.

Die Exporteure von landwirtschaftlichen Geräten und Maschinen in den Vereinigten Staaten von Nord-Amerika wissen sehr wohl, dass die einzig sichere Art, Handelsbeziehungen mit fremden Ländern herzustellen, nicht nur die Befriedigung der Kunden, sondern auch den Verkauf solcher Waaren zur Bedingung macht, welche Dauerhaftigkeit mit möglichster Billigkeit vereinen. Alle derartigen Behauptungen, dass man auch unter dem Kostenpreise kaufen könne, müssen vernünftigen Leuten lächerlich vorkommen. Glücklicherweise offeriren die Fabrikanten der Vereinigten Staaten von Nord-Amerika ihre Produkte allein unter Hinweis auf die ausgezeichnete Güte letzterer, und bitten die Händler und Landwirte aller Länder nur darum, ihnen Gelegenheit zu ehrlichem Wettbewerbe zu geben. Erfolgreiches, geschäftliches Vorgehen bedingt nicht immer die Zuhilfenahme von Kunstgriffen und Uebervorteilung. Die Länder, die für ihre Produkte einen Markt finden, sind eben diejenigen, die den Handel durch rechtmässige Methoden fördern. Jeder amerikanische Fabrikant erkennt die Notwendigkeit an, nur solche Waaren auf den Weltmarkt zu bringen, die eine genaue Untersuchung aller einzelnen Teile ihres Baues nicht zu scheuen brauchen. Dauerhaftigkeit, Stärke und Arbeitsleistung sind Eigenschaften, die nie vernachlässigt werden, und die natürlichen Vorteile Amerikas sind derart, dass sie den Fabrikanten in den Stand setzen, den Marktpreissen aller Länder Konkurrenz zu machen. Die Händler und Landwirte Europas haben sich zu jenem Grad des Verständnisses der Sachlage aufgeschwungen, der im Geschäftsverkehr ein Ausschliessen oder Vorurteile nicht duldet. Vorzügliche Waaren werden stets Nachfrage finden, und die Fabrikanten Amerikas arbeiten darauf hin, sich in Bezug auf musterhafte Fabrikate, die den höchsten Anforderungen entsprechen, an die Spitze zu stellen.

Das nächste Stadium in der Entwicklung unseres Exporthandels, das bevorsteht, ist die Frage der Frachtsätze. Ein genaues Studium der Tarife des letzten Jahres zeigt im Allgemeinen eine Erhöhung derselben, die übrigens durch die Inanspruchnahme so vieler Transportschiffe für die in Asien, Süd-Afrika und auf den Philippinen herrschenden Kriegszustände leicht erklärlich ist. Die Schiffsbauwerfte der ganzen Welt sind noch nie so überfüllt gewesen, wie eben jetzt. Schiffe wurden noch nie in so grosser Anzahl und so enormen Dimensionen gebaut, wie gegenwärtig der Fall ist. In der ganzen Welt tritt ein plötzlishes Verlangen nach Fahrzeugen auf. Die Schiffsbauwerfte werden Mittelpunkte erhöhter Thätigkeit bleiben, bis diesen ausserordentlichen Anforderungen Genüge gethan ist. Neue Werfte werden gebaut, und überall hersscht ein fieberhaftes Verlangen, die entlegensten Länder der Erde in kürzester Zeit mit den grössten Schiffsladungen zu erreichen.

Was aus alledem hervorgehen muss, und in der That bereits teilweise eintrifft, ist ein niedrigerer Frachttarif zwischen den verschiedenen Ländern. Der internationale Verkehr wird in den Wechselbeziehungen der ganzen Welt eine gigantische Rolle spielen. Bisher exportirten die Länder der Erde einen verhältnismässig nur kleinen Teil ihrer Produkte; von nun an wird der Export steigen, denn seine Ausbreitung hat bereits begonnen. Er wird erstaunlich zunehmen. Der internationale Handel wird zu einem der mächtigsten Hebel im Weltgetriebe, ein Hauptfaktor des steten Anwachsens der Welt zu einem höheren Dasein und freisinniger Civilisation.

Einer der mächtigsten Einflüsse, die den europäischen Handel nach den Vereinigten Staaten lenken, ist dem Umstande zuzuschreiben, dass das Münzsystem dieses Landes nunmehr auf Goldwährung hat; und es ist hauptsächlich die grosse Zunahme gemünzten Goldes, die Europa, Afrika und Australien veranlasst, den grösseren Teil ihres Bedarfes in den Vereinigten Staaten zu decken. Beim Vorhersehen von Wahrscheinlichkeiten und Vorteilen auf dem Gebiete des Welthandels muss mit diesem wichtigen Umstande gerechnet werden, besonders in Rücksicht auf den Handelsverkehr Europas mit den Vereinigten Staaten von Nordamerika. Die Goldproduktion der ganzen Welt belief sich im Jahr 1900 auf 256 Millionen Dollar, was gegen 1899 einer Verminderung um 57 Millionen Dollar gleichkommt, die sich durch die Schliessung der Minen im Transvaal erklärt. Trotzdem besitzt die Regierung der Vereinigten Staaten von Nordamerika 92 Millionen mehr Gold als vor einem Jahre, und neun europäische Länder weisen eine Zunahme von 70 Millionen Gold auf. Die Wiederaufnahme der Transvaalminen bedeutet eine enorme Zunahme von Goldgewinnung. Die Erschliessung Alaskas ist mit einer Belebung des Handels und Verkehrs gleichbedeutend. Amerika ist dazu auserkoren, der Mittelpunkt des Welthandels zu werden, und Gold ist hierzu das sicherste Hilfsmittel.

Die Zeitungen lenken allgemeine Aufmerksamkeit auf die enormen Summen hin, die unsere Ausfuhr repräsentirt. Für Oktober allein erreichen dieselben die Höhe von $167,000,000, wovon ein beträchtlicher Teil auf landwirtschaftliche Geräte und Maschinen entfällt. Im Ausland lebende Wiederverkäufer amerikanischer Geräte und Maschinen werden auf diese, dem Geschäft in diesen Produkten so günstige Strömung besonders aufmerksam gemacht. In Europa und anderwärts werden grosse Flächen der Kultur übergeben, wozu die wohlfeilsten und best verwendbaren Geräte benötigt werden. Manche Producenten sehen sich genötigt, amerikanische Ideen und Industriezweige bis zu einem gewissen Grad zum Vorbild zu nehmen. Leichtere Maschinen werden den schwereren vorgezogen; Gewicht an und für sich gilt nicht, was es einst galt; sorgfältigste Bauart wird weit höher geschätzt. Das Wesen der Ueberlegenheit liegt im Material und der Bauart, nicht in Masse und Schwere, und deshalb steigt die Nachfrage nach amerikanischen Geräten und Maschinen so rasch. Der Export trägt das Element steten Wachstums in sich. Die ganze Welt nimmt einen neuen Anlauf, und die Bewegung ist imposanter denn je zuvor. Händler sollten die amerikanische Ausfuhr in Betracht ziehen, und die Bedeutung nicht verkennen, die ihrer enormen Zunahme zugesprochen werden muss.

MARSEILLES MANUFACTURING COMPANY.

In dieser Ausgabe unseres Blattes bringen wir Abbildungen der Fabriksanlage der Marseilles Manufacturing Company in Marseilles, Illinois, Vereinigte Staaten von Nordamerika, wie auch ein teilweises Verzeichnis der von dieser Firma angefertigten Geräte und Maschinen. Die Firma hat verschiedene Spezialitäten, wendet jedoch den Mais-Entkörnern ganz besondere Aufmerksamkeit zu. Anfangs stellte sie nur einfache Entkörner in ihrer urspringlichen Form her, doch nach und nach hat sie diese Apparate so sehr verbessert, dass gegenwärtig die der Anfertigung dieser Spezialität gewidmete Abteilung zu den grössten Mais-Entkörner-Fabriken der Welt zählt. Diese Entkörner sind nicht ausschliesslich für Amerika bestimmt, sondern den Bedürfnissen aller Länder angepasst. Der Mais zeigt grosse Verschiedenheit in Bezug auf Varietät u. s. w., und um von praktischem Werte zu sein, muss der Entkörner allen in dieser Beziehung gestellten Anforderungen entsprechen.

Der mit staubfreiem Cylinder versehene Mais-Entkörner neuer Konstruktion (d. h. das grösste Modell) besitzt eine Leistungsfähigkeit von mehr als 10,000 Bushel Körnermais per Tag, und seine Arbeit ist in jeder Beziehung vollkommen. Er ist den Kulturverhältnissen aller Teile dieses Landes entsprechend gebaut und wird in vier Grössen und Modellen geliefert. Seine charakteristischen Einrichtungen sind durch Patente geschützt.

Der mit Spiralfeder versehene "Cyclone" Maisentkörner, eine der Spezialitäten dieser Fabrik, weist grössere Leistungsfähigkeit und weniger Bestandteile auf als alle anderen Entkörner, während er weniger Betriebskraft beansprucht und viele neue, wichtige Verbesserungen besitzt, wie z. B. einen Kolbenaufstapler und einen Auslauf, beide mit Schaukelbewegung, einen Speiser mit Kettenbetrieb und den "Cyclone" Speiser mit Kraftbetrieb, die sämmtlich patentirt sind. Das vollständige Verzeichnis der von dieser Fabrik gelieferten Entkörner enthält über 150 verschiedene Grössen und Modelle, da hier alle möglichen Gattungen von Entkörnern gebaut werden.

Die Firma hat ferner eine vollständige Auswahl von Göppeln aller Grössen und Modelle, von dem einfachen, einspännigen Göppel bis zu dem schweren, dreifach verzahnten "Hercules" von zwölf Pferdekräften, die sich alle den verschiedenen Betriebszwecken anpassen lassen.

Aus der Liste von in dieser Fabrik gebauten Futtermühlen mögen hier die verzahnten Futtermühlen Erwähnung finden, die auf Pferdebetrieb eingerichtet sind, wie auch die auf Dampfkraft oder sonstigen Treibriemen-Betrieb eingerichteten; ferner die "Marseilles" dreifach verzahnte Futtermühle zum Vermahlen von Kolbenmais, und die "Advance" Kehrmühle, bei welcher eine eigentümlich geformte Stachelbürste zur Anwendung kommt, die diese Mühlen sehr beliebt gemacht hat. Dieselben zerschneiden den Mais, ohne ihn zu quetschen, und sind auch zum Mahlen von Weizen oder Hafer in gemischtem oder reinem Zustande sehr geeignet; auch sind sie so eingerichtet, dass ihnen das Leerlaufen nicht schadet.

Alle Arten von Windmühlen werden hier ebenfalls in verschiedenen Grössen gefertigt, und eine grosse Auswahl von hölzernen und stählernen Windmühltürmen ist stets auf Lager. Fernere Spezialitäten der Marseilles Manufacturing Company sind hölzerne, aus Sektionen gebaute Räder, sowie stählerne Räder mit sog. "Königin-Anstrich" oder "Prinzessin-Anstrich" oder galvanisirt.

Ferner liefert die Fabrik alle Arten von Elevator-Bestandteilen und alle zum Elevatorbetrieb nötigen Artikel; auch die "Pease" Putzmühlen für Landwirtschaft und Magazin, die äusserst stark und dauerhaft sind, und deren Sieb-Apparat alle neuesten Verbesserungen aufweist. Letztere finden sowohl in Australien, Tasmanien, Neu-Seeland und den meisten anderen britischen Kolonien, wie auch in Südamerika, Mexico, Deutschland, Holland, teilweise auch in Asien und anderen Ländern lebhafte Nachfrage. Man kann mit Sicherheit behaupten, dass in den Vereinigten Staaten von Nordamerika überhaupt keine besseren Maschinen gebaut werden.

Bei Bestellungen bezw. Nachfragen ist genau anzugeben, welche Arten von Getreide oder Samen zu reinigen sind, da der Preis der zu liefernden Apparate hiervon abhängt.

Sämmtliche oben erwähnten Geräte und Maschinen werden nach nahezu allen den Teilen der Welt versandt, wo sich Nachfrage nach landwirtschaftlichen Maschinen, besonders Mais-Entkörnern, fühlbar macht. Langjährige Erfahrung im Exportgeschäfte hat die Fabriksverwaltung in den Stand gesetzt, ihre Maschinen und Geräte den betreffenden Anforderungen eines jeden Landes anzupassen, so dass sich diese Apparate heute zur Verarbeitung der Maisernten der verschiedenen Länder vorzüglich eignen.

Zweiggeschäfte der Fabriksgesellschaft befinden sich in allen grösseren Städten der Vereinigten Staaten von Nordamerika, wie auch in der Stadt Mexico, und in Buenos Aires, der Hauptstadt der Argentinischen Republik. Anfragen oder Bestellungen werden in allen diesen Geschäftsstellen entgegengenommen bezw. ausgeführt, die Centralverwaltung befindet sich jedoch in Marseilles, Illinois, Vereinigte Staaten von Nordamerika.

WINDMUHLEN UND APPARATE ZUR WASSERVERSORGUNG.

Die Nachfrage nach Windmühlen, Bewässerungsanlagen und Apparaten aller Art zur Wasserversorgung war im vergangenen Jahre eine geradezu erstaunliche und übertrifft ohne Zweifel die aller früheren Jahre ganz bedeutend. Diese Apparate erfreuen sich bei den Landwirten, Pflanzern und Blumenzüchtern nah und fern stets steigender Beliebtheit, und gegenwärtig stehen Tausende da in Betrieb, wo vor wenigen Jahren auch nicht ein einziger zu finden gewesen wäre.

Die von der Firma Flint & Walling Manufacturing Company, Kendallville, Indiana, Vereinigte Staaten von Nord-Amerika, angefertigten "Star" Windmühlen gehören anerkanntermassen zu den besten ihrer Art. Sie sind nach Plänen der erfahrensten Mechaniker gebaut, aus dem besten Material hergestellt und leisten alle die verschiedenen Dienste, die heutzutage von modernen Windmühlen erwartet werden.

Die auf einer anderen Seite dieses Blattes befindlichen Abbildungen stellen die stählerne, galvanisirte, mit Rückverzahnung vesehene "Star" Windmühle dar, in der die neuesten Verbesserungen mit alten Vorzügen vereint sind, um sie besser als je zuvor und vielen anderen überlegen zu machen. Sie gilt als die leichteste, dauerhafteste und bestgebaute Mühle, die gegenwärtig auf dem Markte ist. Die Schäfte sind aus kalt gewalztem, polirtem Stahl und laufen in langen Lagern aus feinstem Antifrictionsmetall. Die Verbindungs- oder Triebstange ist an beiden Enden mit Antifrictionsmetall verstärkt, und alle grosser Abnützung ausgesetzen Teile sind aus Schmiedeeisen hergestellt. Der Arm des Schüttlers oder der bewegliche Stange, der mit der Trieb- und der Kolbenstange verbunden ist, giebt letzteren eine vollkommen vertikale, leichte Bewegung. Das Sicherheitsventil wird durch eine Anzahl von Hebeln regulirt, die sich leicht handhaben lassen, so dass zum Ausstellen der Mühle nur geringe Kraft erforderlich ist. Die Bremse is direkt an der Nabe des Windrades angebracht, wodurch absolute Kontrolle des Rades erzielt wird.

Die Fabrik liefert die "Star" Windmühlen in Grössen von 4 bis 26 Fuss Durchmesser aus galvanisirtem Stahl oder Holz, sowie alle Arten von eisernen Pumpen, Türmen, Behältern, Brunnenröhren, Hohlwerkzeugen und Wasserversorgungs-Utensilien. Die an anderer Stelle dieses Blattes befindliche Annonce dieser Firma wird besonderer Beachtung empfohlen. Kataloge stehen auf Verlangen in englischer, deutscher, französischer und spanischer Sprache zu Diensten.

Die minder bedeutenden Völker der Erde beginnen den mächtigen Antrieb, der aus dem Bau von Eisenbahnen entspringt, in jeder Fiber ihres Nationalbewusstseins zu fühlen. Zwischen dem Eisenbahnbau und der Fabrikation von Geräten existiren innige Wechselbeziehungen. Eisenbahnen erschliessen die Länder und ermöglichen den Verkehr. Was jetzt, am Morgen des zwanzigsten Jahrhunderts, in jedem Lande der Erde vor sich geht ist recht bedeutungsvoll. Wir stehen am Vorabende des grossartigsten Erwachens, der grössten Ausbreitung landwirtschaftlicher Thätigkeit, die die Welt je gesehen oder erfahren hat. Die ersten Anzeichen der nahenden, gewaltigen Bewegung sind bereits wahrnehmbar, und es lohnt der Mühe, die Sachlage und ihre wahrscheinliche Entwickelung einer raschen Prüfung zu unterziehen. Es giebt kaum eine Waggon-, Schienen- oder Lokomotiven-Fabrik in den Vereinigen Staaten, die nicht auf Monate voraus schon mit Aufträgen versehen wäre. Fabrikanten und andere Geschäftsleute berichten eine wahrhafte Flut von Bestellungen. Die chilenische Regierung hat dreihundert Waggons und Costa Rica dreissig Güter-Waggons bestellt, und Agenten sind im Begriffe, bedeutende Kontrakte von Eisenbahnmaterial für Mexiko, Java, die Argentinische Republik, Brasilien, Japan, Central-Amerika, Australien und die Antillen abzuschliessen. In Jahr 1900 belief sich der Wert der Schienenausfuhr auf zwölf Millionen Dollar; dis Lokomotiven-Ausfuhr des verflossenen Jahres repräsentirte rund fünf Millionen Dollar, der Ausfuhr von Waggons drei Millionen, und die von elektrischen Maschinen, Telegraphen- und Telephoneinrichtungen bewerteten sich auf zwölf Millionen Dollar. Die ganze Welt fängt an, landwirtschaftliche Maschinen und Geräte amerikanischer Provenienz aufzunehmen.

Die Vereinigten Staaten von Nordamerika haben nunmehr seit ihrer Gründung zum ersten Male alle anderen Ländern im Exporthandel hinter sich zurückgelassen.

EXPORT IMPLEMENT AGE

POUR LA CIRCULATION À L'ÉTRANGER EXCLUSIVEMENT.

Journal indépendant, dévoué exclusivement au intérêts du commerce d'exportation de machines d'agriculture, pompes, moulins à vent, outils de fermes et de crémerie accessoires.

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Les États-Unis, pour la première fois dans leur histoire, sont aujourd'hui à la tête de tous les autres pays pour les exportations.

L'emploi d'instruments agricoles augmente tous les ans. La cause en est probablement que chaque année une plus grande quantité de terre est mise en culture.

Tout instrument agricole qui permettra une économie de labeur constituera bientôt un bon placement. Les appareils destinés à épargner le travail ne coûtent rien en réalité, en comparaison du profit qu'on retire de leur emploi.

L'industrie de la laiterie se développe dans tous les pays. L'écrémeuse a plus contribué à révolutionner cette branche d'industrie que toutes les autres causes réunies. L'industrie de la laiterie aide à procurer, dans le pays même, un marché aux produits de la ferme.

Le fermier européen peut se procurer un instrument agricole ou une machine aux États-Unis presque aussi vite que le fermier d'Amérique lui-même. Les États-Unis ont une grande superficie, mais les chemins de fer et les vapeurs rapprochent les distances et facilitent le commerce entre les divers pays.

Chaque année, l'acier et le fer entrent de plus en plus dans la construction des instruments agricoles. On en assure ainsi la légèreté, la solidité, la durabilité et l'efficacité. Les instruments agricoles en bois sont grossiers et lourds, et ne conviennent plus au fermier d'aujourd'hui, qui est ami du progrès.

Le fait que des chariots américains ont été achetés en grande quantité pour faire service dans l'Afrique du Sud, dans le transport des approvisionnements de l'armée, est une preuve de leur supériorité. Solides, fabriqués pour résister aux usages les plus rudes et réunissant tous les derniers perfectionnements, les chariots de ferme américains donnent de la satisfaction partout où ils ont été introduits.

La mouture de son blé à part, le cultivateur n'a pas besoin du meunier. Les broyeurs à grain, autrement dits mortiers à fourrage, tels qu'on les construit aux États-Unis, servent à moudre toute espèce de grain très fin et très rapidement.

Tous les animaux domestiques des États-Unis sont nourris au maïs et à l'avoine. Le maïs tient dans l'alimentation humaine une place plus grande que l'avoine ou le seigle. Quant au blé, non seulement la consommation en est considérable, mais une bonne partie de la récolte s'expédie à l'étranger.

Ceux qui s'occupent des produits américains à l'étranger seront heureux d'apprendre que des groupes commerciaux américains ont récemment émis des voeux en faveur du système métrique et d'un bureau des poids et mesures, ce qui est un pas en avant, dans le sens de l'uniformité des mesures internationales.

Le fermier qui cultive le sol ne s'inquiète nullement du fabricant d'un instrument agricole, pourvu que cet instrument fasse bien son travail. Le fermier devrait acheter à toutes les sources possibles, de façon à se procurer les machines et les instruments agricoles les plus efficaces pour l'objet auquel il les destine.

L'EXPORT IMPLEMENT AGE est appelé à faire connaitre partout les instruments agricoles, les machines et les véhicules américains. Dans la poursuite de ce but, il ne jette pas le discrédit sur les articles fabriqués dans d'autres pays, ayant la croyance que les méthodes honorables et légitimes sont, en fin de compte, plus puissantes que l'antagonisme direct.

Ceux qui introduisent avec succès dans les pays étrangers les produits des ateliers et des fabriques américains ont appris depuis longtemps qu'il est précieux d'éviter une prétention inconsciente de supériorité, qu'il est parfois si naturel d'éprouver. La fierté est instinctive dans la nature humaine et on doit la respecter. L'habitude est un tryan, et son influence doit être combattue avec délicatesse. La nature humaine est disposée, ainsi qu'on le constate généralement, à ne pas faire plus de travail qu'il n'est nécessaire. Néanmoins, l'esprit d'agitation américaine se répand dans l'univers, et il est destiné à exercer son influence sur tout le monde. Mais il faut avoir soin de ne toucher aux vieilles choses existantes, aux vieilles méthodes et aux vieilles affections que d'une main douce et dirigeante. L'expérience aidera à faire connaître les meilleurs moyens d'agir.

Les négociants, les importateurs et les exportateurs du monde entier apprendront avec plaisir que la quantité d'argent monnayé dans l'univers est montée en trois ans de $4,000,000,000 à $11,600,000,000, c'est-à-dire elle s'est presque triplée. Cela signifie qu'on peut faire et qu'on fait un plus grand volume d'affaires. Le grand problème qui se pose devant le monde n'est pas la construction de navires, l'entretien d'armées ou la construction de fortifications, mais l'augmentation de la quantité et du volume de l'argent monnayé dans l'univers. A la vérité, ce fait n'est pas aussi généralement apprécié que l'exige son importance économique. Le monde n'est pas encore sorti de sa période peu scientifique. Une vaste intelligence n'est pas encore devenue sa base et sa méthode d'action. Les nations luttent pour la possession de l'or afin d'en constituer des trésors de guerre, en vue de conflits possibles. Ce qu'on devrait faire n'est pas d'amasser des moyens de destruction, mais de créer de l'argent à l'aide duquel les énergies à moitié inactives des nations avancées du monde pourront être employées plus largement, et les énergies latentes et non développées des nations inférieures pourront être mises en action dans l'intérêt de l'amélioration intellectuelle et physique et du progrès moral.

Au nombre des influences qui dirigent la demande européenne vers les États-Unis, est le fait que le système monétaire de ce pays est arrivé à être établi sur la base d'or. Au nombre des influences qui ont fait de l'Europe, de l'Afrique et de l'Australie de grands acheteurs, est l'accroissement du volume de l'or monnayé. En envisageant les probabilités et les avantages commerciaux, il ne faut pas perdre ce fait de vue, surtout en ce qui concerne le commerce européen avec les États-Unis. La production d'or dans le monde entier, en 1900 a été de $256,000,000, soit, par rapport à 1899, une diminution de $57,000,000 provenant d'une suspension d'exploitation dans des mines du Transvaal. Malgré cela, le gouvernement des États-Unis possède $92,000,000 d'or de plus qu'il y a un an, et neuf gouvernements européens en ont $70,000,000 de plus. La reprise des travaux dans les mines du Transvaal signifie une énorme augmentation d'or. Le développement de l'Alaska signifie un plus grand commerce. L'Amérique est destinée à devenir le centre de l'activité commerciale du monde entier, et l'or en sera l'instrument.

C'est lorsqu'une machine commence à s'user que ses véritables mérites deviennent apparents. Au début, toutes les machines et tous les instruments agricoles sont pour le mieux. C'est lorsque la période de réparations, de brisures ou d'usure arrive que le fermier doit faire attention. C'est une science de faire une machine dont toutes les pièces s'usent d'une façon égale. A quoi peut servir une machine qui devrait durer dix ans lorsque, par suite de quelque défaut qu'on aurait dû prévoir, elle s'avarie au bout de trois ans et nécessite des réparations ou un raccommodage? La qualité caractéristique de l'instrument agricole américain est d'être une création harmonieuse. Ses pièces se connaissent l'une l'autre, pour ainsi dire. Lorsqu'elles sont réunies l'harmonie existe. Le frottement est réduit à son minimum. Il n'y a pas d'effort inutile ou évitable. Chaque pièce est appelée à faire sa part juste et légitime, rien de plus: ce qui fait qu'elle résiste à l'usure, et c'est pour cette raison que la machine, lorsqu'elle est vieille, est virtuellement neuve. Elle continue à faire son travail, fait qu'attestent tous les outils essayés en Europe. Ce facteur de durabilité veut dire quelque chose de plus que la différence pécuniare dans le prix. La valeur réelle d'un instrument agricole est déterminée par la longueur du temps pendant lequel il fait du bon travail. Ceux qui vendent des instruments agricoles américains ne tiennent pas toujours compte de ce détail. Beaucoup d'instruments s'avarient, et le propriétaire oublie de compter combien de temps ils ont duré. Au point de vue de la résistance à l'usure et de la durabilite, les instruments agricoles américains ne redoutent aucune concurrence.

MACHINES À NETTOYER LES GRAINS ET LES GRAINES.

Tarares. — Décortiqueurs à Trèfle. — Appareils pour Moulins, etc.

Il n'y a pas de spécialités où des améliorations et des progrès plus rapides aient été faits que dans ces machines et instruments employés pour séparer et nettoyer toutes sortes de grains et de graines. Les États-Unis excellent à ce point de vue, et leurs articles sont employés dans toutes les parties du monde où pousse du grain.

Chaque fermier sait qu'il est important que son grain soit nettoyé et débarrassé de la graine des mauvaises herbes, de la menue paille, des grains cassés et autres substances, car le prix du grain sera réduit sur le marché en proportion de la qualité inférieure résultant pour lui de ce qu'il n'est pas au degré voulu. Ceux des fermiers qui peuvent se rappeler les vans mécaniques d'il y a trente ou quarante ans n'oublieront pas quel travail désagréable c'était de débarrasser le grain de sa balle et de la menue paille, et quels nuages de poussière accompagnaient toujours les opérations de ce genre. À cette époque l'homme qui travaillait près d'un van mécanique ressemblait souvent à un houilleur, en même temps que l'air était presque une masse de poussière. Les vans mécaniques d'aujourd'hui ont été étonnament perfectionnés depuis cette époque. La quantité de poussière flottant dans l'atmosphère a été réduite à un minimum, toute la balle et la saleté sont enlevées des grains, et le charbon, la nielle sont éliminés aussi bien que tous les grains rouillés ou imparfaits. Par le fait, le grain, que ce soit du blé, de l'orge, de l'avoine, du seigle ou du maïs, sort du van mécanique parfaitement propre, et l'opération se fait rapidement et avec une dépense minima comme main-d'œuvre. Ces vans mécaniques se fabriquent dans toutes les dimensions qu'on désire, ils sont simples à faire fonctionner et sont construits avec les matières les plus solides et les meilleures. Ceux faits pour l'exportation sont extra-forts, mais le but des fabricants américains est non seulement de les faire solides et durables, tout en y joignant la qualité de fonctionnement facile, mais encore de permettre de les faire fonctionner à la main ou à l'aide d'un manège à un cheval (ou plus, si l'on préfère); certains de ces vans mécaniques sont construits de telle façon qu'au moyen d'un appareil aspirateur la poussière, la menue paille et les petites graines sont emportées à l'extérieur du bâtiment ou déversées dans quelque récipient. Les vans mécaniques américains, soit pour la ferme soit pour le magasin, ont acquis une réputation dans le monde entier, et là où ils ont été présentés ils se sont solidement établis.

Les machines à nettoyer le grain sont bien plus nombreuses que beaucoup de personnes pourraient le supposer. Il y a des machines qui nettoyent le grain, enlèvent la nielle et séparent le rebut de ce qui est propre. Il y a aussi des machines à polir et à parfaire (munies de brosses), de diverses dimensions et de différents modèles. Des machines spéciales pour les gruaus d'avoine et de maïs, et des machines pour séparer l'avoine des matières étrangères, aussi bien que des séparateurs à tamis, sont aujourd'hui portés à la perfection, tandis que des tamis roulants pour enlever la poussière du blé qui a déjà été nettoyé et aussi pour enlever les germes du malt et pour nettoyer efficacement l'orge sans l'abimer sont d'un usage très répandu. Les substances métalliques sont immédiatement retirées du blé, du siegle, du maïs, de l'orge, du malt, etc., à l'aide d'aimants, tandis qu'on "tond" l'avoine avec une rapidité telle qu'elle paraît merveilleuse, pas moins de 50,000 boisseaux d'avoine ayant été "tondus" par une seule machine en une journée, bien qu'il y ait, naturellement, de plus petites machines pour des travaux moindres. Une autre machine enlève la balle de l'avoine et la nettoie, ce qui donne à l'avoine une valeur plus grande que le coût supplémentaire de la main d'oeuvre. Le nettoyage du sarrasin est également compris dans le travail exécuté par beaucoup de ces machines.

Essayer d'énumérer les nombreuses machines en usage pour le nettoyage du grain demanderait beaucoup de place. Il y a des machines qui lavent et sèchent le blé, des machines pour emballer le son et la pâture des animaux, pour emballer la farine de blé, de sarrazin, d'avoine, etc., et pour passer le grain à la vapeur, en même temps que même les machines à riz ont été tellement perfectionnées que la question de le nettoyer et de le polir est devenue chose facile. La description de ces diverses machines serait longue, mais on les emploie sur une grande échelle en Amérique, et c'est grâce à elles que l'Amérique est en mesure de concourir sur les marchés du monde avec le grain et les produits du grain. Les pays qui s'attendent à la combattre commercialement devront employer à cet effet les machines les plus perfectionnées, et sous ce rapport on verra que l'expérience acquise dans les grandes régions d'Amérique où l'on cultive le grain, a demontré ce fait que les machines fabriquées en Amérique ne peuvent pas être surpassées.

Le décortiqueur à trèfle est une autre machine où le fabricant américain excelle. Après des années de patience et de travail, le décortiqueur à trèfle a été perfectionné et porté au plus haut degré d'excellence. Cette machine décortique les graines et en enlève soigneusement la paille (ou tige); il n'en reste rien; de sorte qu'on recueille toute la graine, et la machine ne s'engorge pas en décortiquant du trèfle humide; elle est en outre légère à traíner. La graine de trèfle est nettoyée, prète pour le marché, et le travail est parfait. La machine est montée sur roues (si on le préfère), et on fabrique aussi des machines spéciales pour décortiquer et nettoyer la graine d'alfalfa (luzerne). En raison du fait que la graine de trèfle est excessivement petite et qu'il est difficile de la recueillir sans une grande perte, la machine à décortiquer et à nettoyer est une merveille, et le fabricant américain a, par la perfection atteinte dans sa construction, grandement diminué le coût de la production de la graine, et délivré le fermier des méthodes lentes autrefois en pratique pour séparer et nettoyer la graine de trèfle. Il n'est pas non plus hors de propos d'appeler l'attention sur une autre spécialité dans laquelle les États-Unis se sont placés au premier rang; ce sont les moulins portatifs, où la pierre est employée pour moudre; ces moulins peuvent moudre jusqu'à 100 boisseaux à l'heure; ils sont de différentes dimensions et de divers modèles. Ces machines ont des destinations variées; on les emploie principalement pour moudre le maïs, mais il y a quelques modèles pour l'avoine, les épices, les graines oléagineuses, etc., tous construits avec les matières les plus solides et perfectionnés grâce à l'expérience acquise pendant nes années.

Le but de cet article est d'appeller l'attention des marchands étrangers sur l'importance qu'il y a pour eux à étudier les machines de fabrication américaine; vans mécaniques, séparateurs, décortiqueurs à trèfle, machines pour moulins et les diverses machines à nettoyer, à polir, etc., car elles peuvent être prises en mains par les marchands avec l'assurance qu'elles ont été éprouvées dans un pays qui a plus de minoteries et qui produit plus de grain qu'aucun autre. En réalité, aucune machine ne pourrait garder sa réputation une seule journée en Amérique, à moins de posséder les plus grands mérites. Non seulement il faut qu'elle accomplisse parfaitement sa tâche, mais encore qu'elle soit légère, solide, durable et qu'elle donne un rendement maximum. Toute machine dont l'usage est très répandu en Amérique donnera satisfaction dans tous les pays et à tous les gens.

L'emballage de ces articles pour l'expedition est un autre point qui est l'objet de soins attentifs de la part des fabricants américains, car ils envoyent leurs marchandises dans les pays étrangers, et ils savent ce qu'il faut faire en matière d'emballage et comment le faire.

Des catalogues descriptifs, en n'importe quelle langue, seront envoyés par nos fabricants, et les marchands étrangers ne devraient pas hésiter à leur ecrire. On trouvera dans ce numéro de L'EXPORT IMPLEMENT AGE des annonces de fabricants de ce genre; ils sont tous dignes de confiance et jouissent de la meilleure réputation; ce sont de vieilles maisons, établies depuis longtemps, auxquelles l'experience a appris les affaires.

Les petites nations de l'univers commencent à ressentir, dans toutes les fibres de leur être national, la puissante impulsion résultant de la construction des chemins de fer. Il y a une corrélation intime entre la construction des chemins de fer et la fabrication des instruments agricoles. Les chemins de fer ouvrent les pays à l'exploitation et rendent le trafic possible. Ce qui se passe dans tous les pays du globe à l'aurore de ce vingtième siècle, est très significatif. Nous sommes à la veille de la plus grande reprise et de la plus grande expansion d'activité agricole que le monde ait jamais éprouvée ou affrontée. Les premières gouttes de la prochaine averse doivent être un avertissement pour nous. Jetons un rapide coup d'oeil, au moment où commencent l'année et le siècle, sur la situation et sur l'avenir. Il n'y a guère aux États-Unis d'atelier, d'usine de rails, ou de fabrique de locomotives qui n'ait sur ses livres des commandes pour l'exportation pour plusieurs mois à venir. Les négociants et les fabricants signalent un flot de demandes. Le gouvernement chilien a commandé trois cents wagons et le Costa Rica trente wagons à marchandises. Des commissionnaires en marchandises faisant l'exportation, sont actuellement chargés de faire exécuter d'importants contrats pour des fournitures et du matériel de chemin de fer pour le compte du Mexique, de Java, de la République Argentine, du Brésil, du Japon, de l'Amérique Centrale, de l'Australie et des Antilles. Dans le cours de l'année 1900, la valeur des rails exportés a été de $12,000,000. L'année dernière, les exportations de locomotives se sont élevées, en chiffres ronds, à $5,000,000, celles des wagons à $3,000,000, et celles des machines électriques et des fournitures pour télégraphe et téléphone à $12,000,000. Le monde entier se prépare à acheter des instruments agricoles américains.

MOULINS À VENT ET ARTICLES POUR APPROVISIONNEMENT D'EAU.

L'année dernière, les moulins à vent, les appareils d'irrigation et les articles pour approvisionnement d'eau ont fait l'objet d'une demande qui a été quelque chose de merveilleux, et sans aucun doute elle dépassera toutes les ventes enregistrées précédemment. Ces divers articles sont de plus en plus en faveur auprès du fermier, du planteur, du fleuriste, du jardinier, du campagnard et du propriétaire de ranch, et, à l'heure actuelle, il y en a des milliers mis en œuvre là où, il y a quelques années, on n'en aurait pas trouvé un seul.

Les moulins à vent "Star," fabriqués par la maison Flint & Walling Manufacturing Company, à Kendallville, Indiana, États-Unis d'Amérique, sont reconnus être parmi les meilleurs, à tous les points de vue. Les modèles en sont établis d'après les règles de la mécanique la plus parfaite; ils sont construits avec les meilleures matières, et ils rendront tous les différents services auxquels le moulin à vent moderne est assujéti.

Les dessins d'autre part font voir le moulin à vent "Star," en acier galvanisé, à engrenage en arrière, dans lequel de nouveaux traits et d'anciennes qualités ont été combinés de façon à le rendre meilleur que jamais et supérieur à beaucoup d'autres. On prétend que c'est le moulin à vent marchant avec le plus d'aisance, le plus durable et le mieux établi qui soit offert aujourd'hui au public. Les arbres sont en acier laminé à froid, poli, tournant dans de longs coussinets en métal antifriction ou babbitt de qualité supérieure. La tige de communication, ou bielle, est garnie de métal antifriction aux deux extrémités, et toutes les pièces devant supporter un effort sérieux sont en fer forgé. Le bras à bascule, ou balancier, relié à la tige de communication et à la tige de pompe, donne à celle-ci un mouvement parfaitement vertical, sans effort. L' appareil régulateur est dirigé à l'aide d'une série de leviers qu'on manœuvre facilement, et il faut peu de force pour détourner le moulin du vent. Le frein est fixé directement sur le moyeu de la roue à vent, ce qui permet de la contrôler d'une façon absolue.

La maison est prête à fournir des moulins à vent "Star" en dimensions de 4 à 26 pieds de diamètre, soit en acier galvanisé soit en bois, ainsi que tous les genres de pompes en fer, tours, réservoirs, outils pour puits tubulaires et articles pour approvisionnement d'eau, et on appelle l'attention sur l'annonce de la compagnie publiée plus loin dans les colonnes de ce journal. Des catalogues en anglais, allemand, français ou espagnol seront fournis aux marchands qui en feront la demande.

Les exportateurs d'instruments agricoles et de véhicules aux États-Unis comprennent trés bien que la seule méthode sûre d'établir un commerce avec les pays étrangers est non seulement de donner satisfaction aux clients, mais aussi de vendre des marchandises qui soient durables et au plus bas prix possible. Prétendre qu'un article peut être acheté au-dessous du prix de revient paraîtrait une absurdité à toutes les personnes sensées. Heureusement, les fabricants des États-Unis présentent leurs instruments agricoles et leurs véhicules avec leurs seuls mérites, en ne demandant aux négociants et aux fermiers du monde entier que de leur donner l'occasion d'une comparaison équitable. Pour réussir, les méthodes commerciales n'impliquent pas toujours l'emploi de ruses ou de supercheries. Les pays qui trouvent des marchés pour leurs marchandises sont ceux qui développent le commerce par des méthodes légitimes. Tous les fabricants américains comprennent la nécessité de mettre sous les yeux des acheteurs du monde entier des articles pouvant supporter un examen dans tous leurs détails de construction. La durabilité, la solidité et l'efficacité sont des qualités dont il est toujours tenu compte, et en même temps les avantages naturels de l'Amérique permettent à ses fabricants de soutenir la concurrence dans n'importe quel pays, au point de vue des prix. Les négociants et les fermiers d'Europe ont atteint ce degré d'intelligence qui ne demande pas le règne de la proscription ou des préjugés dans les transactions commerciales. On demandera toujours ce qu'il y a de meilleur, et les fabricants américains visent à être les premiers pour la production des merchandises types.

La première question à régler dans le développement de notre commerce d'exportation est la question des prix du fret. L'étude des tableaux des prix pendant l'année dernière indique, en général, une augmentation, mais elle s'explique en grande partie par l'absorption de navires pour les transports nécessités par les guerres dans l'Afrique de Sud, en Asie, et aux îles Philippines. Les chantiers de construction navale n'ont jamais été aussi encombrés qu'ils le sont actuellement. Jamais on n'a demandé des navires en aussi grand nombre et d'un aussi fort tonnage qu'aujourd'hui. Un grand besoin a soudainement saisi le monde entier. Jusqu'à ce que cette demande extraordinaire n'aura été satisfaite, les chantiers de construction seront des centres d'activité. On établit de nouveaux chantiers, et il existe une anxiété fièvreuse de s'assurer les moyens d'atteindre les points les plus reculés du globe dans le moins de temps possible avec les plus fortes cargaisons.

De tout cela résultera forcément, et l'effet commence à s'en faire sentir, un taux ou prix plus bas pour le transport du fret d'un pays dans un autre. Le commerce international deviendra un facteur colossal dans le développement progressif du monde. Jusqu'à présent, on a exporté relativement peu de produits de chaque pays. Dorénavant, les exportations augmenteront. Le mouvement d'expansion a commencé. Il prendra des proportions surprenantes. Le commerce international est appelé à devenir l'un des puissants leviers, grâce auxquels s'effectueront l'expansion et le développement du monde dans le sens d'une existence meilleure et d'une civilisation plus étendue.

Les chemins de fer ont fait, en un siècle, plus pour l'humanité qu'il n'avait été fait pendant mille ans. Après les chemins de fer, ce sont les navires qui seront les agents de la providence et de l'évolution. Le constructeur de chemins de fer a été à la tête de la civilisation pendant des dizaines d'années, et son œuvre n'est nullement terminée. Le constructeur de navires et le navigateur sont les hommes de l'avenir; c'est à eux que le monde sera redevable du prochain grand mouvement en avant, dont les dernières soixante années n'ont été, en quelque sorte, que l'école préparatoire.

Le mot qui qualifie l'agriculture telle qu'elle est pratiquée aux États-Unis, est le mot "extensif," en ce qui concerne l'exploitation des fermes; mais, en Europe, c'est le mot "intensif," si nous pouvons forger un mot. L'idée américaine est de cultiver la plus grande quantité de terre possible; cultiver la terre le mieux possible est l'idée ou objet distinctif en Europe. L'idée d'extension a conduit à produire des machines et des instruments agricoles destinés à faire la plus grande somme de travail possible avec une dépense minima. L'idée "intensive," qui règne dans les pays anciens, reste attachée naturellement aux méthodes manuelles et s'intéresse moins à la cooperation des machines. Cette idée, aux débuts de l'introduction des instruments agricoles américains à l'étranger, a rendu la tâche particulièrement difficile, mais comme les avantages d'auxiliaires mécaniques se sont fait sentir, les machines ont été adoptées peu à peu. Leur adoption a été forcément lente, à cause des superficies restreintes et bien délimitées dont dispose chaque fermier, lequel, au temps passé, s'arrangeait pour les cultiver sans machines, dans la mesure de ses besoins pressants.

Depuis l'avènement de nouveaux facteurs, les limites étroites des fermes dans les pays étrangers se sont étendues, et ainsi s'est presentée l'occasion de se servir de machines. Ces facteurs ont été et sont encore les chemins de fer, grâce auxquels on peut atteindre des marchés plus éloignés, et l'accroissement de la demande provenant de l'augmentation du nombre de personnes s'occupant de fabrication.

Dans quelques localités des États-Unis, il y a des indices d'un retour prochain aux genres ou méthodes "intensifs" d'agriculture, ce qui naturellement se manifeste par certaines modifications d'instruments agricoles pour se conformer à la demande. De sorte que l'état de choses en Europe et aux États-Unis prend la même direction, bien que, de fait, il ne puisse jamais être la même.

La morale de tout cela est que, à mesure qu'augmente la rage de la concurrence, les européens trouveront dans les ateliers américains les inventions mécaniques qui leur seront les plus utiles. Pourquoi ne trouve-t-on pas de ces inventions en Angleterre, où la situation a plus d'analogie avec celle du continent? La raison en est que le stimulant manque en Angleterre et qu'il existe en Amérique. L'abondance de terres en Amérique aiguillonne l'esprit d'invention en vue de les utiliser et de tirer le meilleur parti de la plus petite parcelle, parce qu'on est forcé de le faire par la concurrence toujours présente, mais qui n'existe pas, au même point de vue, en Angleterre, où il y a moins de terres.

Il est donc logiquement vrai de dire que c'est aux États-Unis que le monde entier devra, à l'avenir, venir chercher ces perfectionnements dans les instruments agricoles et les machines que l'agriculture scientifique réclame comme auxiliaires, car c'est dans l'agriculture scientifique que se feront à l'avenir les veritables progrès.

Il est bon de faire remarquer aux Européens que les États-Unis sont aujourd'hui à la tête du monde entier, au point de vue des exportations; ils dépassent même la Grande-Bretagne. Le chiffre vérifié des exportations pendant onze mois de 1900, a été de $1,308,913,789 pour les États-Unis et de $1,303,440,000 pour la Grande-Bretagne.

MARSEILLES MANUFACTURING COMPANY.

Nous publions dans ce numéro des vues de l'usine de la maison Marseilles Manufacturing Company, de Marseilles, Illinois, États-Unis d'Amérique, ainsi que des dessins représentant quelques-uns des articles fabriqués par cette maison. Cette compagnie a la spécialité de beaucoup d'instruments agricoles, mais elle s'est occupée particulièrement des décortiqueurs à maïs. Commençant avec le décortiqueur à maïs tout simple, elle l'a perfectionné à tel point qu'elle possède aujourd'hui une des plus grandes fabriques de décortiqueurs à maïs du monde entier. Ces décortiqueurs ne sont pas fabriqués spécialement pour l'Amérique, mais ils sont arrangés de façon à accomplir le travail exigé dans tous les pays, car le maïs diffère à beaucoup de points de vue, selon la variété, etc., et par suite, le décortiqueur, pour être efficace, doit convenir au travail qu'on exige de lui.

En plus de son grand assortiment de décortiqueurs à maïs, la compagnie fabrique également des machines à hacher et à broyer la nourriture du bétail, des manèges, des scies pour le bois, des moulins à vent, des fournitures pour ascenseurs, des chargeurs à foin, des machines à vanner ou tarares, etc., etc.

Son décortiqueur à maïs "New Process," à cylindre sans poussière, dans son plus grand modèle, peut décortiquer plus de 10,000 boisseaux de maïs par jour, et il le fait à la perfection. Il est adapté aux différentes régions du pays et se fabrique en quatre dimensions et modèles. Ses caractères spéciaux sont protégés par des brevets.

Le décortiqueur à maïs "Cyclone," à ressort, est une des spécialités qui, au dire de la compagnie, a un rendement plus considérable et se compose de moins de pièces qu'aucun autre décortiqueur à maïs à ressort, tout en exigeant moins de force motrice ; il présente beaucoup de caractères importants et nouveaux. L'appareil à bascule pour empiler les balles de maïs, le tuyau de décharge du grain à bascule, la bague à charnière en fer, l'alimentation forcée à chaine, et l'alimentation forcée "Cyclone" sont tous brevetés. La série complète de décortiqueurs fabriqués par cette compagnie se compose de plus de 150 dimensions et modèles, d'où il résulte qu'elle fabrique tout, en fait de décortiqueurs.

Elle fabrique un assortiment complet de manèges, de toutes dimensions et de tous modèles, depuis le manège simple de la force d'un cheval jusqu'au puissant manège á triple engrenage "Hercules" de la force de douze chevauz, pouvant s'adapter à toute sorte de machines.

Dans la série des machines à broyer la nourriture du bétail, on peut citer les broyeurs à engrenage, qui s'emploient avec un manège, les broyeurs à courroie, à vapeur ou à autre force motrice à courroie, le broyeur "Marseilles" à triple engrenage, qui broie le maïs dans l'épi et le broyeur rapide "Advance." On emploie avec succès un ciseau triangulaire d'une forme particulière (procédé spécial pour couper le grain), et ces ciseaux sont très populaires. Ils coupent le maïs sans l'écraser et ils sont également efficaces pour broyer le blé et l'avoine, soit seuls soit mélangés, et ils ne s'abîment pas en fonctionnant à vide.

La maison fabrique également une série complète de moulins à vent, de toutes dimensions, et une série complète de tours en bois et en acier pour moulins à vent. Aussi des poulies en deux pièces, en bois, des roues en acier peintes "à la reine" ou galvanisées et des roues en acier peintes "à la princesse" ou galvanisées.

Elle fabrique toute sorte de fournitures pour ascenseurs et tous les articles qu'on emploie dans l'industrie spéciale des machines élévatoires.

Elle fabrique également des machines à vanner ou tarares "Pease" pour les fermes et les magasins, construites au point de vue de la solidité et de la durabilité et réunissant en elles-mêmes tous les derniers perfectionnements de l'appareil à cribler. Une vente considérable de ces machines a été établie en Australie, en Tasmanie, en Nouvelle-Zélande et dans presque toutes les autres colonies anglaises, ainsi que dans l'Amérique du Sud, au Mexique, en Allemagne, en Hollande, dans certaines parties de l'Asie et dans d'autres pays. On peut dire sans crainte qu'il ne se fabrique pas aux États-Unis de plus belles machines en ce genre.

En décrivant l'objet pour lequel on désire commander de ces machines, on devra spécifier toutes les espèces de grains et de graines qu'on désire nettoyer, car c'est là-dessus que s'établissent les prix de vente.

La compagnie a expédié les articles mentionnés ci-dessus dans presque toutes les parties du monde, partout où l'on demande des machines agricoles, et, en ce qui concerne les décortiqueurs à maïs, sa longue expérience du commerce avec l'étranger lui a permis d'adapter spécialement ses machines aux besoins de chaque pays en particulier, de façon à pouvoir traiter le maïs poussé en n'importe quel pays.

Les succursales de cette maison sont situées sur tous les points principaux d'écoulement des marchandises, parmi les grandes villes des États-Unis, et aussi à Mexico et à Buenos-Aires, République Argentine. On répond aux demandes de renseignements et exécute les commandes dans n'importe quelle de ces succursales, mais le bureau principal à Marseilles, Illinois, est le centre général des affaires de la maison.

Un point à surveiller pour les marchands d'instruments agricoles américains en Europe, dans l'Amérique du Sud et en Australie est la tendance probable à la hausse des prix du fer et de l'acier. Il y a aux États-Unis une renaissance industrielle. L'esprit d'entreprise agricole et manufacturier est éveillé. Le bois dur de construction se vend plus cher. Les marchands d'instruments agricoles achètent et font des commandes pour plus tard. En raison de cet état de choses, il sera bon de se mettre en rapport le plus tôt possible avec les fabricants. Souvent une maison, dans le but de s'assurer des affaires, prendra aux prix courants des commandes à livrer plus tard, même lorsqu'elle est convaincue que les prix augmenteront. Les marchands à l'étranger ne devraient pas tarder à profiter de ce trait caractéristique de la nature humaine. La situation industrielle pleine de vigueur, qui existe aujourd'hui dans les pays manufacturiers, promet de durer, et la tendance à la hausse des prix promet de porter la valeur des articles bien au-dessus de ce qu'elle est actuellement. Le moment est bon pour tous ceux qui s'occupent d'instruments agricoles d'entrer en correspondance avec des fabricants américains et d'apprendre, en entretenant avec eux des relations directes, ce qu'ils peuvent faire au point de vue de l'approvisionnement de marchandises pour la vente en 1901.

LES HERSES "LEAN."

La maison Roderick Lean Manufacturing Company, de Mansfield, Ohio, États-Unis d'Amérique, est une des plus importantes et des premières maisons du monde entier pour la fabrication des herses. Cette compagnie a la spécialité des herses, et elle a obtenu les plus hautes récompenses aux Expositions Universelles de Chicago et d'Omaha.

La "Herse Lean toute en acier" est employée partout aux États-Unis et aussi dans les pays étrangers. Cette compagnie fabrique des herses exclusivement depuis 25 ans, et ses ouvriers ont par conséquent l'expérience de l'emploi et de l'objet des herses en même temps que de toutes les conditions requises pour en faire un instrument agricole parfait.

La herse "Lean" est fabriquée entièrement en acier, le but du fabricant étant de réunir la légèreté, la solidité et la durabilité. Elle fait le travail complètement et avec un minimum de dépense de force motrice. Les fermiers américains préfèrent un instrument agricole léger pour un ou deux chevaux à une lourde machine pour quatre chevaux, et les fermiers des autres pays s'aperçoivent rapidement que, s'ils tiennent à lutter avec le fermier américain, il leur faut adopter ses méthodes en employant des instruments efficaces et qui épargnent du travail. Cette herse, étant toute en acier, ne comporte pas de parties en fonte ou en fer malléable, et elle a moins de pièces que beaucoup d'autres ; par conséquent elle est moins susceptible de se briser.

Elle est fabriquée d'après le principe du zig-zag, l'attelage tirant du centre et tout droit, les sections pouvant librement s'adapter aux inégalités du terrain. Pour herser le jeune maïs, le blé, les pommes de terre, les prairies, etc., on sera remboursé du prix de la herse en une seule saison.

La herse "Lean" est facilement et rapidement dirigée et ajustée à l'aide d'un levier, qui est arrangé de façon à donner tous les avantages possibles sans inconvénient pour l'instrument lui-même. La herse est maintenue par un cadre en acier faisant tout le tour des sections. Les barres dentées sont arrondies avec un contrefort aux extrémités, et lorsque les armatures des coins et les barres extrêmes sont resserrées, les contreforts des barres dentées sont relevés contre les barres latérales et doivent, par conséquent, rester en place. Les dents sont toutes en dedans, et comme le cadre ne peut pas balancer, il n'est pas possible qu'elles se lèvent. C'est là un trait important qu'on ne devrait pas perdre de vue.

Les dents ont la forme d'un losange : elles sont forgées et trempées, dureront des années, sont fabriquées avec un talon carré à l'endroit où elles pénètrent dans le cadre, et elles ont un contrefort. Les écrous sont tous munis, à la face inférieure, d'une couronne qui s'ajuste entre les nervures de la barre d'acier, et, quand on les serre, la fixité des dents est assurée. On peut les tourner ou les enlever facilement.

Aucune herse ne devrait peser plus qu'il n'est nécessaire. Une herse lourde s'enfoncera dans la terre ayant peu de consistance, tandis qu'une herse légère a plus de vibration, elle est moins susceptible d'être obstruée par des débris, et, en fait de pulvérisation du sol elle donne des résultats beaucoup plus satisfaisants.

Pour se procurer des circulaires donnant des renseignements plus détaillés sur ces célèbres herses, écrire à la maison Roderick Lean Manufacturing Company, Mansfield, Ohio, États-Unis d'Amérique.

EXPORT IMPLEMENT AGE

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Consecuencia de la producción de azúcar de remolacha en gran escala en España, es la creciente demanda de aperos agrícolas en aquel país. Los exportadores de los Estados Unidos y de Europa y los importadores europeos de maquinarias, están de acuerdo en convenir que desde que España perdió sus colonias de las Antillas, el cultivo de la remolacha azucarera casi ha monopolizado la atención de los agricultores españoles. Para dichos agricultores y para los que desean suministrarles aperos, brinda sus columnas este periódico para, que por medio de ellas, les llegue el presente mensaje que resumiremos en las siguientes pocas palabras : que el éxito depende de los métodos más científicos y en el mayor uso de los aparatos que economizan mano de obra ; y en ningún otro país es aplicado el principio de la agricultura científica y de los aperos que economizan mano de obra, tan extensamente como en los Estados Unidos. Sus mayores competidores convienen en este hecho.

Entre otras circunstancias que acrecientan la demanda de Europa hacia los Estados Unidos, una muy principal razón es que su sistema monetario tiene por base el oro. Entre las influencias que han contribuido á hacer de Europa, Africa y Australia fuertes compradores, está el aumento del oro amonedado. En las previsiones de las probabilidades y ventajas comerciales no se puede descuidar este dato, especial al comercio europeo con los Estados Unidos. La producción de oro en el mundo entero ha sido en 1900 de $250,000,000, con una merma de $57,000,000 sobre la producción de 1899, debido á que no se trabaja ahora en las minas del Transvaal. Pero, á pesar de eso, tiene el Gobierno de los Estados Unidos $92,000,000 más en oro que en el año anterior, y nueve gobiernos europeos tienen $70,000,000 más. Al volver á trabajar en las minas de oro del Transvaal, habrá un aumento enorme en la producción de oro, y el desenvolvimiento de las minas de Alaska, dará por resultado más comercio. América está destinada á ser el centro de actividad del comercio del mundo, y su instrumento habrá de ser el oro.

Los comerciantes, importadores y exportadores del mundo verán con gusto el dato por el cual aparece la existencia de metálico en el mundo aumentada en tres años de $4,000,000,000 á $11,600,000,000, ó sean cerca de tres tantos más. Lo que significa esto es que se puede hacer un número más crecido de negocios, y en realidad así ha sido. El gran problema que debe resolver el mundo, no es por cierto la construcción de navios blindados, ni el gran acopio de armas y pertrechos ni aumentar las fortalezas sino aumentar las existencias de metálico. Es verdad que esta cuestión no es universalmente reconocida como lo demandaría la gran importancia económica que tiene. Aún no ha salido el mundo de sus pañales anticientíficos. El desarrollo intelectual no es aún la base de los métodos de acción. Las naciones pelean para conseguir el oro que les ha de dar presupuestos de guerra más y más crecidos. Lo que convendría, no es el incremento de los agentes de destrucción, sino el aumento de la fortuna metálica pública, con la cual las energías de las naciones más adelantadas pueden ser mejor utilizadas, y las de los países menos adelantados, estimuladas para su mejoramiento físico, moral é intelectual.

MARSEILLES MANUFACTURING COMPANY.

Nous publions dans ce numéro des vues de l'usine de la maison Marseilles Manufacturing Company, de Marseilles, Illinois, États-Unis d'Amérique, ainsi que des dessins représentant quelques-uns des articles fabriqués par cette maison. Cette compagnie a la spécialité de beaucoup d'instruments agricoles, mais elle s'est occupée particulièrement des décortiqueurs à maïs. Commençant avec le décortiqueur à maïs tout simple, elle l'a perfectionné à tel point qu'elle possède aujourd'hui une des plus grandes fabriques de décortiqueurs à maïs du monde entier. Ces décortiqueurs ne sont pas fabriqués spécialement pour l'Amérique, mais ils sont arrangés de façon à accomplir le travail exigé dans tous les pays, car le maïs diffère à beaucoup de points de vue, selon la variété, etc., et par suite, le décortiqueur, pour être efficace, doit convenir au travail qu'on exige de lui.

En plus de son grand assortiment de décortiqueurs à maïs, la compagnie fabrique également des machines à hacher et à broyer la nourriture du bétail, des manèges, des scies pour le bois, des moulins à vent, des fournitures pour ascenseurs, des chargeurs à foin, des machines à vanner ou tarares, etc., etc.

Son décortiqueur à maïs "New Process," à cylindre sans poussière, dans son plus grand modèle, peut décortiquer plus de 10,000 boisseaux de maïs par jour, et il le fait à la perfection. Il est adapté aux différentes régions du pays et se fabrique en quatre dimensions et modèles. Ses caractères spéciaux sont protégés par des brevets.

Le décortiqueur à maïs "Cyclone," à ressort, est une des spécialités qui, au dire de la compagnie, a un rendement plus considérable et se compose de moins de pièces qu'aucun autre décortiqueur à maïs à ressort, tout en exigeant moins de force motrice; il présente beaucoup de caractères importants et nouveaux. L'appareil à bascule pour empiler les balles de maïs, le tuyau de décharge du grain à bascule, la bague à charnière en fer, l'alimentation forcée à chaîne, et l'alimentation forcée "Cyclone" sont tous brevetés. La série complète de décortiqueurs fabriqués par cette compagnie se compose de plus de 150 dimensions et modèles, d'où il résulte qu'elle fabrique tout, en fait de décortiqueurs.

Elle fabrique un assortiment complet de manèges, de toutes dimensions et de tous modèles, depuis le manège simple de la force d'un cheval jusqu'au puissant manège á triple engrenage "Hercules" de la force de douze chevauz, pouvant s'adapter à toute sorte de machines.

Dans la série des machines à broyer la nourriture du bétail, on peut citer les broyeurs à engrenage, qui s'emploient avec un manège, les broyeurs à courroie, à vapeur ou à autre force motrice à courroie, le broyeur "Marseilles" à triple engrenage, qui broie le maïs dans l'épi et le broyeur rapide "Advance." On emploie avec succès un ciseau triangulaire d'une forme particulière (procédé spécial pour couper le grain), et ces ciseaux sont très populaires. Ils coupent le maïs sans l'écraser et ils sont également efficaces pour broyer le blé et l'avoine, soit seuls soit mélangés, et ils ne s'abîment pas en fonctionnant à vide.

La maison fabrique également une série complète de moulins à vent, de toutes dimensions, et une série complète de tours en bois et en acier cur moulins à vent. Aussi des poulies en deux pièces, en bois, des roues en acier peintes "à la reine" ou galvanisées et des roues en acier peintes "à la princesse" ou galvanisées.

Elle fabrique toute sorte de fournitures pour ascenseurs et tous les articles qu'on emploie dans l'industrie spéciale des machines élévatoires.

Elle fabrique également des machines à vanner ou tarares "Pease" pour les fermes et les magasins, construites au point de vue de la solidité et de la durabilité et réunissant en elles-mêmes tous les derniers perfectionnements de l'appareil à cribler. Une vente considérable de ces machines a été établie en Australie, en Tasmanie, en Nouvelle-Zélande et dans presque toutes les autres colonies anglaises, ainsi que dans l'Amérique du Sud, au Mexique, en Allemagne, en Hollande, dans certaines parties de l'Asie et dans d'autres pays. On peut dire sans crainte qu'il ne se fabrique pas aux États-Unis de plus belles machines en ce genre.

En décrivant l'objet pour lequel on désire commander de ces machines, on devra spécifier toutes les espèces de grains et de graines qu'on désire nettoyer, car c'est là-dessus que s'établissent les prix de vente.

La compagnie a expédié les articles mentionnés ci-dessus dans presque toutes les parties du monde, partout où l'on demande des machines agricoles, et, en ce qui concerne les décortiqueurs à maïs, sa longue expérience du commerce avec l'étranger lui a permis d'adapter spécialement ses machines aux besoins de chaque pays en particulier, de façon à pouvoir traiter le maïs poussé en n'importe quel pays.

Les succursales de cette maison sont situées sur tous les points principaux d'écoulement des marchandises, parmi les grandes villes des États-Unis, et aussi à Mexico et à Buenos-Aires, République Argentine. On répond aux demandes de renseignements et exécute les commandes dans n'importe quelle de ces succursales, mais le bureau principal à Marseilles, Illinois, est le centre général des affaires de la maison.

Un point à surveiller pour les marchands d'instruments agricoles américains en Europe, dans l'Amérique du Sud et en Australie est la tendance probable à la hausse des prix du fer et de l'acier. Il y a aux États-Unis une renaissance industrielle. L'esprit d'entreprise agricole et manufacturier est éveillé. Le bois dur de construction se vend plus cher. Les marchands d'instruments agricoles achètent et font des commandes pour plus tard. En raison de cet état de choses, il sera bon de se mettre en rapport le plus tôt possible avec les fabricants. Souvent une maison, dans le but de s'assurer des affaires, prendra aux prix courants des commandes à livrer plus tard, même lorsqu'elle est convaincue que les prix augmenteront. Les marchands à l'étranger ne devraient pas tarder à profiter de ce trait caractéristique de la nature humaine. La situation industrielle pleine de vigueur, qui existe aujourd'hui dans les pays manufacturiers, promet de durer, et la tendance à la hausse des prix promet de porter la valeur des articles bien au-dessus de ce qu'elle est actuellement. Le moment est bon pour tous ceux qui s'occupent d'instruments agricoles d'entrer en correspondance avec des fabricants américains et d'apprendre, en entretenant avec eux des relations directes, ce qu'ils peuvent faire au point de vue de l'approvisionnement de marchandises pour la vente en 1901.

LES HERSES "LEAN."

La maison Roderick Lean Manufacturing Company, de Mansfield, Ohio, États-Unis d'Amérique, est une des plus importantes et des premières maisons du monde entier pour la fabrication des herses. Cette compagnie a la spécialité des herses, et elle a obtenu les plus hautes récompenses aux Expositions Universelles de Chicago et d'Omaha.

La "Herse Lean toute en acier" est employée partout aux États-Unis et aussi dans les pays étrangers. Cette compagnie fabrique des herses exclusivement depuis 25 ans, et ses ouvriers ont par conséquent l'expérience de l'emploi et de l'objet des herses en même temps que de toutes les conditions requises pour en faire un instrument agricole parfait.

La herse "Lean" est fabriquée entièrement en acier, le but du fabricant étant de réunir la légèreté, la solidité et la durabilité. Elle fait le travail complètement et avec un minimum de dépense de force motrice. Les fermiers américains préfèrent un instrument agricole léger pour un ou deux chevaux à une lourde machine pour quatre chevaux, et les fermiers des autres pays s'aperçoivent rapidement que, s'ils tiennent à lutter avec le fermier américain, il leur faut adopter ses méthodes en employant des instruments efficaces et qui épargnent du travail. Cette herse, étant toute en acier, ne comporte pas de parties en fonte ou en fer malléable, et elle a moins de pièces que beaucoup d'autres; par conséquent elle est moins susceptible de se briser.

Elle est fabriquée d'après le principe du zigzag, l'attelage tirant du centre et tout droit, les sections pouvant librement s'adapter aux inégalités du terrain. Pour herser le jeune maïs, le blé, les pommes de terre, les prairies, etc., on sera remboursé du prix de la herse en une seule saison.

La herse "Lean" est facilement et rapidement dirigée et ajustée à l'aide d'un levier, qui est arrangé de façon à donner tous les avantages possibles sans inconvénient pour l'instrument lui-même. La herse est maintenue par un cadre en acier faisant tout le tour des sections. Les barres dentées sont arrondies avec un contrefort aux extrémités, et lorsque les armatures des coins et les barres extrêmes sont resserrées, les contreforts des barres dentées sont relevés contre les barres latérales et doivent, par conséquent, rester en place. Les dents sont toutes en dedans, et comme le cadre ne peut pas balancer, il n'est pas possible qu'elles se lèvent. C'est là un trait important qu'on ne devrait pas perdre de vue.

Les dents ont la forme d'un losange; elles sont forgées et trempées, dureront des années, sont fabriquées avec un talon carré à l'endroit où elles pénètrent dans le cadre, et elles ont un contrefort. Les écrous sont tous munis, à la face inférieure, d'une couronne qui s'ajuste entre les nervures de la barre d'acier, et, quand on les serre, la fixité des dents est assurée. On peut les tourner ou les enlever facilement.

Aucune herse ne devrait peser plus qu'il n'est nécessaire. Une herse lourde s'enfoncera dans la terre ayant peu de consistance, tandis qu'une herse légère a plus de vibration, elle est moins susceptible d'être obstruée par des débris, et, en fait de pulvérisation du sol elle donne des résultats beaucoup plus satisfaisants.

Pour se procurer des circulaires donnant des renseignements plus détaillés sur ces célèbres herses, écrire à la maison Roderick Lean Manufacturing Company, Mansfield, Ohio, États-Unis d'Amérique.

EXPORT IMPLEMENT AGE

PARA CIRCULAR EN EL EXTRANJERO SOLAMENTE.

Periódico independiente, dedicado exclusivamente al fomento del comercio de exportación en maquinaria para la Agricultura y lecherías, bombas, molinos de viento, aperos de labranza y suministros á cortijos, haciendas, ingenios de hacer azúcar, sitios de labor etc.

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Consecuencia de la producción de azúcar de remolacha en gran escala en España, es la creciente demanda de aperos agrícolas en aquel país. Los exportadores de los Estados Unidos y de Europa y los importadores europeos de maquinarias, están de acuerdo en convenir que desde que España perdió sus colonias de las Antillas, el cultivo de la remolacha azucarera casi ha monopolizado la atención de los agricultores españoles. Para dichos agricultores y para los que desean suministrarles aperos, brinda sus columnas este periódico para que por medio de ellas, les llegue el presente mensaje que resumiremos en las siguientes pocas palabras: que el éxito depende de los métodos más científicos y en el mayor uso de los aparatos que economizan mano de obra; y en ningún otro país es aplicado el principio de la agricultura científica y de los aperos que economizan mano de obra, tan extensamente como en los Estados Unidos. Sus mayores competidores convienen en este hecho.

Entre otras circunstancias que acrecientan la demanda de Europa hacia los Estados Unidos, una muy principal razón es que su sistema monetario tiene por base el oro. Entre las influencias que han contribuido á hacer de Europa, Africa y Australia fuertes compradores, está el aumento del oro amonedado. En las previsiones de las probabilidades y ventajas comerciales no se puede descuidar este dato, especial al comercio europeo con los Estados Unidos. La producción de oro en el mundo entero ha sido en 1900 de $256,000,000, con una merma de $57,000,000 sobre la producción de 1899, debido á que no se trabaja ahora en las minas del Transvaal. Pero, á pesar de eso, tiene el Gobierno de los Estados Unidos $92,000,000 más en oro que en el año anterior, y nueve gobiernos europeos tienen $70,000,000 más. Al volver á trabajar en las minas de oro del Transvaal, habrá un aumento enorme en la producción de oro, y el desenvolvimiento de las minas de Alaska, dará por resultado más comercio. América está destinada á ser el centro de actividad del comercio del mundo, y su instrumento habrá de ser el oro.

Los comerciantes, importadores y exportadores del mundo verán con gusto el dato por el cual aparece la existencia de metálico en el mundo aumentada en tres años de $4,000,000,000 á $11,600,000,000, ó sean cerca de tres tantos más. Lo que significa esto es que se puede hacer un número más crecido de negocios, y en realidad así ha sido. El gran problema que debe resolver el mundo, no es por cierto la construcción de navios blindados, ni el gran acopio de armas y pertrechos, ni aumentar las fortalezas, sino aumentar las existencias de metálico. Es verdad que esta cuestión no es universalmente reconocida como lo demandaría la gran importancia económica que tiene. Aún no ha salido el mundo de sus pañales anticientíficos. El desarrollo intelectual no es aún la base de los métodos de acción. Las naciones pelean para conseguir el oro que les ha de dar presupuestos de guerra más y más crecidos. Lo que convendría, no es el incremento de los agentes de destrucción, sino el aumento de la fortuna metálica pública, con la cual las energías de las naciones más adelantadas pueden ser mejor utilizadas, y las de los países menos adelantados, estimuladas para su mejoramiento físico, moral é intelectual.

INTENTIONAL SECOND EXPOSURE

MAQUINARIA PARA LIMPIAR GRANOS Y SEMILLAS.

Aventadoras, Mondadoras, de Trébol, Maquinaria para Molinos, Etc.

No existe otro ramo en que se hayen realizado más rápidas mejoras ni más progresos que en estas máquinas y sus apéndices para separar y limpiar todas las especies de granos y semillas. Los Estados Unidos están muy adelantados en esto, y en todos los países del mundo en que se cultivan granos, se usan sus manufacturas.

Ningún agricultor ignora la importancia de la limpieza del grano, separándola de las semillas de plantas nocivas y malas yerbas, del hollejo, de los granos quebrados, y demás substancias, puesto que el precio del grano será tanto más reducido cuanto mayor sea el descuido á este respecto, dando por resultado una calidad inferior. Los agricultores que recuerdan las aventadoras de treinta ó cuarenta años atrás, no podrán facilmente olvidar la tremenda faena de la separación del grano y del hollejo y las nubes de polvo que acompañaban estas operaciones. El peón que trabajaba á proximidad de una de estas aventadoras en aquellos días tenía el aspecto de un obrero de minas de carbón, y el aire que se respiraba no era sino una densa polvareda. Las aventadoras de la actualidad han sido extraordinariamente mejoradas desde aquel entonces. La cantidad de polvo que ahora flota en la atmósfera ha sido reducida á lo más ínfimo, todos los hollejos y basuras son apartados de los granos y asi mismo la mala yerba, la zizaña, y los granos hueros ó imperfectos. De hecho, ora sea el grano de trigo, de cebada, de avena, de centeno ó de maíz, sale de la aventadora en perfecto estado, y la operación se hace rapidamente y con el menor esfuerzo de mano de obra. Estas aventadoras se hacen de todos los tamaños que se deseen, ellas trabajan con sencillez, y el material de que están hechas es el más fuerte y el mejor en todos sentidos. Las que se destinan á la exportación, son extraordinariamente dobles, pero el propósito de los fabricantes norteamericanos es, no tan sólo que sean fuertes y duraderas, sí que también que combinen condiciones de moción ligera puesto que pueden ser movidas por brazos ó por un solo caballo de fuerza (ó más, si se quiere). Algunas de estas aventadoras tienen la ventaja de que por medio de un apéndice de succión, el polvo, los hollejos, y los granos livianos, son llevados fuéra del edificio ó trasladados á algún otro receptáculo. Las aventadoras norteamericanas, ora sean para la granja ó para el almacén, tienen ya establecida su reputación en el mundo entero, y donde quiera que se introducen se les aprecia en lo que valen.

La maquinaria para limpiar granos, comprende muchos más aparatos de lo que se supone. Hay máquinas para estregar el grano, separar las suciedades y separar los desechos. También existen pulidoras y concluidoras (éstas tienen cepillos), de varios tamaños y sistemas. Máquinas especiales para harina de avena y harina de maíz; máquinas para la separación de la avena de las demás substancias, así como cribas separadoras, que han llegado á la perfección; se usan también mucho, las cribas giratorias para apartar las basuras del trigo ya limpio, y también para apartar el germen de la malta y para poder limpiar la cebada sin dañarla. Las substancias metálicas son instantáneamente separadas del trigo, del centeno, del maíz, de la cebada, de la malta, etc., por medio de imanes, y la avena es picada con tal rapidez que parece cosa maravillosa, puesto que una sola máquina ha picado en un día hasta 50,000 bushels de avena, bien que hay también máquinas para operaciones más pequeñas. Hay otra máquina que aparta el hollejo de la avena, y la limpia, lo cual da á la avena un valor mayor que el recargo de mano de obra; la limpieza del trigo negro está también incluida en la obra de muchas máquinas.

Tratar de hacer una reseña de todas las maquinarias que se usan en la limpieza de los granos requeriría gran espacio. Las hay para lavar y secar el trigo, para empacar el afrecho y el pasto, para empacar la harina, el trigo negro, la harina de avena, etc., y para pasar el grano por vapor; hasta las maquinarias para el arroz han sido perfeccionadas en tales términos, que hoy día se hacen las operaciones de limpiarlo y pulirlo, con suma facilidad. Sería demasiado prolijo enumerar y describir todas estas máquinas, pero todas éllas están en constante uso en Norte América, y es con su ayuda que pueden los norteamericanos competir en todos los mercados de granos y productos derivados. Los países que se propusieran competir con éste, en el mercado de granos, habrían de empezar por usar las maquinarias más perfectas para su beneficio y á este respecto es cosa demostrada por la experiencia, en las regiones norteamericanas donde se cultivan los granos en grandes cantidades, que las maquinarias que se construyen en este país no pueden ser mejoradas por ningún otro.

La mondadora de trébol es otra de las máquinas en que sobresale el fabricante norteamericano. Después de varios años de paciencia y de atención, ha llegado dicha mondadora al más alto grado de perfección. Monda esta máquina la semilla y la separa esmeradamente de la paja (ó espigas) sin que quede ni una sola, al paso que todas las semillas se aprovechan; la máquina no se embaraza al mondar trigo humedo, y su moción es siempre muy ligera. La semilla de trébol es entregada limpia, como para ser llevada al mercado, y la obra es de todo punto perfecta. La máquina está montada sobre ruedas (si así se prefiere); se hacen máquinas especiales para mondar y limpiar la semilla de alfalfa. Si se considera que las semillas de alfalfa son en extremo pequeñas y que es muy difícil el beneficio de esta semilla sin gran pérdida, resulta ser una maravilla la mondadora y limpiadora de trébol; de donde se sigue que el fabricante norteamericano, al construirla, ha disminuido en gran manera el costo de la producción de semilla y aliviado al agricultor mejorando los ingratos métodos de separación y limpieza del trébol, como se practicaba antaño. No está tampoco fuéra de lugar, llamar también la atención hacia otro ramo en el cual han llegado los Estados Unidos á ocupar el primer puesto. Nos referimos al molino portátil, en que se usa la piedra de moler; pueden estos molinos moler hasta 100 bushels por hora; estos molinos existen en varios tamaños y formas. Se hacen para varios fines, pero los más se usan para moler maís, bien que hay algunos para moler avena, especies, frutos de aceite, etc., todos éllos son del material más fuerte que se conoce y han sido perfeccionados en muchos años de práctica y experiencia.

El objeto de este artículo es llamar la atencion de los comerciantes extranjeros hacia las aventadoras, separadoras de granos, mondadoras de trébol, maquinarias para molienda de granos y toda la variedad de limpiadoras y pulidoras, etc., de fabricación norteamericana. Todas estas maquinarias tienen su venta asegurada por sus excelentes condiciones, pues que han sido probadas en el país que tiene más establecimientos productores de harina, y cuya producción en granos es también mayor que la de ningún otro país. De hecho no prodria en los Estados Unidos conservar un solo día su reputación una máquina cuyo mérito no fuera incontestable. Sus condiciones han de ser no tan sólo el cabal desémpeño de la faena que se le exije, sino además que su moción sea liviana, que sea fuerte y duradera, y su alcance de producción el mayor posible. Todas las máquinas que se usan extensamente en este pais, por necesidad han de satisfacer las exigencias de todas los agricultores del mundo entero.

El embalage de estas máquinas, para ser enviadas á largas distancias, recibe especial atención de los fabricantes norteamericanos, porque éllos están al tanto, por las mercancías que envían al extranjero, de las condiciones en que aquellas han de ser empacadas para cada país.

Los catálogos, con la entera descripción de los artículos, serán enviados por los fabricantes á todas las personas que los requieran, traducidos á todos los idiomas, y los comerciantes extranjeros no deberán vacilar en pedirlos. Los avisos de dichos fabricantes figuran en esta entrega del "Export Implement Age." Todas estas casas son dignas de confianza y son muy afamadas, por ser, todas, casas muy antiguas, cuyo principal maestro ha sido la experiencia en esta clase de negocios.

Las más pequeñas naciones del mundo sienten su organismo fuertemente impelido hacia el progreso, por los beneficios que resultan de los ferrocarriles. Hay una relación íntima y directa entre el incremento de los ferrocarriles y la fabricación de aperos agrícolas porque los ferrocarriles abren los países al comercio y hacen posible el tráfico. Lo que estamos viendo en todos los países en estos primeros albores del siglo veinte, es una gran enseñanza. Estamos en vísperas de la mayor expansión que habrá de tener la agricultura en el mundo entero, y que dejará muy atrás la de los pasados siglos. Las señales de este movimiento no dejan ninguna duda Echemos pues una rápida ojeada al abrirse el año y el siglo, sobre la presente situación y lo que ella promete. Apenas habrá en los Estados Unidos una fábrica de wagones, ó de rieles, ó de locomotoras, que no tenga apuntados fuertes pedidos, para muchos meses. Los comerciantes y fabricantes, anuncian todos un acopio de cartas, pidiendo informes. El gobierno chileno ha encargado tres cientos wagones, y Costa Rica treinta wagones para carga, y actualmente hay pendientes varios contratos por intermedio de casas de comisión, para material de ferrocarriles, por parte de Méjico, Java, la Argentina, el Brasil, el Japón, Central América, Australia y las Antillas. En el año de 1900, el valor de las exportaciones de rieles ha sido de $12,000,000. Las exportaciones de locomotoras, han sido el año pasado, de $5,000,000, más ó menos; las de wagones de $3,000,000, las de maquinarias eléctricas, teléfonos y telégrafos, de $12,000,000. El mundo entero pues está disponiéndose á comprar gran cantidad de aperos norteamericanos.

ESPAÑA Y LOS ESTADOS UNIDOS.

Es grato ver las amistosas relaciones comerciales que existen actualmente entre España y las Estados Unidos. Bien que no haya pasado mucho tiempo desde la conclusión de la guerra entre ambos países, aún en tiempo de dicha guerra, no se acabó por completo el sentimiento de amistad y simpatía entre dos pueblos que por tanto tiempo habían tenido amistosas relaciones comerciales. No son los individuos responsables de las acciones de sus gobiernos, y no hay motivo para que ambos pueblos mantengan entre si sentimientos de hostilidad. Por fortuna para los que odian la guerra y se complacen en la paz, el tiempo sana las heridas y restablece las simpatías y amistad que antes prevalecían entre las naciones.

La población de España está aumentando rapidamente y su comercio está tomando mayores creces que las del siglo anterior. Está aliviada ya del peso y atención de colonias ingratas, y sus hijos permanecen en casa para dar pábulo á sus industrias en vez de ser sacrificados en distantes batallas navales: las granjas duplicarán su producción, al paso que sus fábricas pronto estarán en aptitud de poder suministrar á sus habitantes los artículos que ántes se compraban en el extranjero.

España en toda época tendrá un gran comercio. Su situación geográfica le brinda grandes ventajas para el negocio. Ella tiene en Norte América grandes mercados para una gran cantidad de productos que no alcanza á consumir en casa, y pronto se verá cuan formidable será este nuevo competidor en todos los mercados del mundo, y acaso llegue el día en que la nación española celebrará la separación de las colonias de la madre patria como una de las mayores bendiciones del siglo diez y nueve. Ya no tendrá España la rémora de gobernar países distantes, con la necesidad ingente de mantener un gran pié de fuerza armada, sino que ahora estará en las condiciones normales que le permitan ocuparse en mejorar sus propias condiciones. Harto tiene que hacer en darle incremento á la agricultura, alentar sus industrias, y extender su comercio.

El interés de España está en darle pábulo á su comercio con los Estados Unidos, por las muchas ventajas que resultarán para ambos países. Los productos españoles son muy apreciados y hay gran demanda de ellos en este país; este dato es de suma importancia, porque este país constituye, por su gran población, un excelente mercado para los productos españoles. El comercio entre ambos países redundará también en beneficio de los intereses de la marina mercante española, y nos atrevemos á asegurar que en pocos años, nosotros también estaremos bien representados en ese ramo, como es natural que se espere de un pueblo que tántos y tan ventajosos puertos tiene, con centenares de millas de costas.

Los exportadores norteamericanos de aperos y vehículos agrícolas están convencidos que el único modo de establecer relaciones comerciales con los países extranjeros, es no sólo satisfacer á los parroquianos, si que también vender mercancías que tengan condiciones de duración, al costo más reducido que se pueda Todas las afirmaciones tendentes á probar que pueda ser comprado un artículo por menos del precio de costo, es una simple boberia y un absurdo, así lo comprenderán todas las personas de buen sentido. No proceden así los fabricantes norteamericanos de aperos y vehículos agrícolas, sino que al presentar sus artículos en venta, sólo confian en que éstos están recomendados por su propio mérito, y sólo exijen de los comerciantes y agricultores del exterior que les proporcionen oportunidades para probar su mérito comparéndolos con los de otras procedencias. No siempre significa la palabra comercio la tendencia á engañar para vender. Los métodos duraderos son los que inician el negocio por medios legítimos. Esto lo entienden perfectamente los fabricantes norteamericanos, y por eso procuran poner ante la vista del comprador artículos que puedan soportar la inspección minuciosa de los peritos, en todas sus piezas. La duración, fuerza y eficacia son condiciones que nunca son pasadas por alto, amén de que las ventajas naturales que al fabricante brinda este país, lo pone en condiciones de poder competir en precios con todos los demás países. Los comerciantes y agricultores europeos han llegado á un adelanto intelectual, que no da cabida á preocupaciones en tratándose de comprar maquinarias agrícolas, y por eso es que sólo compran lo mejor sin preocuparse de otras consideraciones. Los fabricantes norteamericanos están tratando de ser los primeros en la fabricación de artículos selectos.

La próxima cuestión que habrá de allanarse para el desarrollo de nuestras exportaciones, es la del precio de los fletes. El estudio de la tarifa de fletes en los pasados años, muestra un aumento, pero esto es debido á la demanda de buques, para las guerras de Filipinas, Asia y Sur de Africa. Los astilleros del mundo entero, nunca han estado tan ocupados como ahora. Nunca se han necesitado tantos buques, ni de tanto calado como en la actualidad. El mundo ha exijido de golpe una gran cantidad de buques, y los astilleros permanecerán ocupados hasta que sea abastecida esta gran demanda. Hanse establecido nuevos astilleros, y reina una fiebre por conseguir llegar á los últimos confines del mundo, lo más pronto que se pueda y con los mayores cargamentos.

Lo primero que se desea, y que se está en camino de realizar, es la reducción de los precios de los fletes, ó sea el acarreo entre un país y otro, porque el comercio internacional, ha de ser un factor principal en el progreso del mundo. Hasta ahora no ha sido exportada sino una cantidad comparativamente pequeña de la producción total de cada país. En adelante, aumentarán las exportaciones. La expansión se ha iniciado y crecerá extraordinariamente. El comercio internacional, habrá de ser una de las más poderosas fiebres, que acometerá al mundo para alcanzar un progreso mayor y una civilización mejor comprendida.

Los ferrocarriles han hecho más, en un siglo, por la humanidad, que los progresos realizados en un millar de años. Lo que más se necesita para la realización de estos ideales, son los buques. El constructor de ferrocarriles ha estado á la cabeza de la civilización por varios lustros, y sin embargo aún no está terminada su obra. Á los fabricantes de buques y á los navegantes, será en adelante acreedor el mundo, por el gran paso adelante que le harán dar, y para ello no habrán sido los sesenta últimos años sino una escuela preparatoria.

ARTICULOS PARA MOILINOS DE VIENTO Y SUMINISTRO DE AGUA.

La demanda de molinos de viento, y de aparatos de riego y para suministro de agua, ha sido en el año pasado extraordinaria, y no hay duda que la estadística acusará un considerable aumento sobre los años anteriores. Su crédito va en proporción creciente entre los agricultores, los granjeros, hortaliceros, jardineros, hortelanos, floristas, etc., y en este año hay millares de esos aparatos en acción, en sitios donde no se veía uno solo en años anteriores.

El molino de viento "Star," manufacturado por la casa Flint & Walling Manufacturing Company, Kendallville, Ind., Estados Unidos de Norte América, tienen fama de ser de los mejores para todos los propósitos. Están fabricados por el modelo de las más afamadas maquinarias; su construccion se hace con los mejores materiales, y pueden prestar todas las clases de servicio que se requieren de los molinos de viento modernos.

Los grabados en otra página representan el molino de viento de acero galvanizado "Star," con engranaje en la parte de atrás, en el cual se combinan nuevas mejoras con las antiguas cualidades, para hacerlo muy superior á los anteriores y á muchos otros de los actuales. Tiene fama de ser el de más liviana moción, al mismo tiempo que el mejor ideado y más duradero de los que se ofrecen hoy en venta. Las aspas son de acero arrollado en frio y pulido, y se mueven en largos cilindros de metal Babbitt de primer orden. La vara de conexión, ó pistón, tiene ambos extremos de dicho, metal, y todas las piezas que están sometidas á mucho desgaste están forjadas en hierro. La vara tracera ó movediza que esta en conexión con el pistón y el vástago de bomba, le da á ésta una moción perfectamente vertical sin ningún desgaste. El aparato que gobierna está controlado por una serie de palancas que funcionan con facilidad, puesto que requieren muy poco esfuerzo para poner el molino fuera de la acción del viento. El regulador está en conexión directa con el cajón de la rueda del molino, asegurando así su absoluta regulación.

La Compañia está en disposición de poder suministrar molinos de viento "Star" desde 4 hasta 26 piés de diametro, así de acero galvanizado como de madera, toda clase de bombas de acero, torres, tanques, herramientas para pozos tubulares y artículos para suministro de agua, y nos permitimos llamar la atención hacia su aviso que publicamos en otra página de este entrega. Los catálogos serán enviados por la Compañía, á quien los pida, en cualquiera de los idiomas inglés, alemán, francés y español.

La venta en el exterior de Bombas americanas, movidas por brazos ó por fuerza motriz, está tomando creces, según rezan las últimas estadísticas. Los compradores del extranjero, están pues invitados á mantenerse al tánto de progresos de la industria fabricadora de bombas en los Estados Unidos, en especial las de pequeñas dimensiones. Los fabricantes norteamericanos están exportando mucho para el Sur de Africa, el Norte de Africa y el Sur de Europa, donde las condiciones se adaptan para usarlas en gran escala. También en ellas han sido ejecutadas algunas mejoras, y los compradores europeos que las han adquirido recientemente, hablan de estas bombas con muchos elogios.

UN CATÁLOGO EN ESPAÑOL.

La bien conocida casa de James Leffel & Co., constructora de motores de vapor, calderas y ruedas de agua, en Springfield, Ohio, acaba de publicar un nuevo catálogo "I" en español, en el cual está descrito y pormenorizado con grabados todo el surtido de motores y de calderas que fabrica. Es una hermosa publicación bien cómoda y adaptada para los negocios de exportación: su tamaño es del modelo de 9 pulgadas por 6, con cuarenta páginas de texto y grabados. Los grabados que acompaña el texto descriptivo son perfectamente claros con explicaciones completas. Las medidas están en sistema métrico, y los precios están contenidos en el mismo catálogo, lo cual lo hace claro y de fácil comprensión para el comprador extranjero. Se enviará gratis un ejemplar á quien lo solicite de la Compañía, á la dirección arriba apuntada, estipulando bien lo que se pida.

LOS RASTRILLOS "LEAN."

La casa Roderick Lean Manufacturing Co., de Mansfield, Ohio, Estados Unidos de Norte América, es una de las fábricas más grandes é importantes del mundo en la fabricación de rastrillos. Dicha fabricación es la especialidad de la Compañía, y por eso ha obtenido las más altas recompensas en las Exposiciones Universales de Chicago y de Omaha.

El "Rastrillo Lean todo de acero" está en uso en toda la extensión de los Estados Unidos y también en el extranjero. Esta Compañía ha fabricado rastrillos exclusivamente en los útilimos 25 años, y por lo tanto son sus maquinistas expertos en los usos y propósitos de los rastrillos, así como en todos los requisitos necesarios para producir un apero perfecto.

El rastrillo "Lean" es hecho completamente de acero, con el objeto de combinar la liviandad con la fuerza y la duración. Hace el trabajo con suma perfección y con el menor gasto de fuerza motriz. Los agricultores norteamericanos prefieren un apero liviano para uno ó dos caballos, antes que una maquinaria pesada para un tiro de cuatro caballos, y de resultas los agricultores de otros países se están convenciendo que si desean competir con los norteamericanos, han de empezar por adoptar sus mismos métodos, usando aparatos que economicen fuerza motriz. Como este rastrillo es todo de acero, y no tiene piezas de hierro colado, y como además tiene menos piezas que muchos otros, resulta que está menos expuesto á romperse.

Está fabricado por el principio del zigzag, el tiro haciendo la tracción por el centro bien derecho, dejando que las secciones se adapten ellas mismas á las desigualdades del terreno. Para el propósito de rastrear maíz en ciernes, trigo ó papas (patatas), praderas, etc, sacará su costo en una sola estación.

El rastrillo "Lean" es fácil y prontramente gobernado por medio de una palanca, la cual está dispuesta para asegurar todas las ventajas posibles sin que sufra el apero. El rastrillo es mantenido unido por medio de una armazón de acero que corre al rededor de la sección. Las barras de los dientes son redondeadas con lengüetas en los extremos, y cuando las abrazaderas de las esquinas y las barras de los extremos están afianzadas sobre las lengüetas de las barras de dientes, son traídas contra las barras laterales y, por lo tanto, han de permanecer en su sitio. Los dientes están situados todos por dentro, y como la armazón no se puede mecer, es por lo tanto imposible que se aflojen. Es este un rasgo importante que se debe tener en cuenta.

Los dientes tienen forma romboidal, son forjados y templados, y pueden durar muchos años; tienen gargantas cuadradas en los puntos en que entran en la armazón lo que se hace forzándolos. Las tuercas tienen cada una, una corona en el lado inferior adaptable en los costados de la barra de acero, y cuando los dientes están apretados, están perfectamente seguros. Se les puede dar vuelta y reponerlos con facilidad.

Ningún rastrillo ha de cargar más peso del necesario. Un rastrillo demasiado pesado se enterrará dentro de una tierra floja; al paso que uno liviano, tiene más vibraciones; es más difícil que se obstruya con basuras y sus resultados como pulverizador son mucho más satisfactorios.

Para conseguir circulares que dan más pormenores respecto de esto célebre rastrillo, diríjanse á la casa Roderick Lean Manufacturing Co., Mansfield, Ohio, Estados Unidos de Norte América.

MARSEILLES MANUFACTURING COMPANY.

Insertamos en esta entrega algunas vistas de los edificios de la casa Marseilles Manufacturing Co., de Marseilles, Ill., Estados Unidos de Norte América, y además un renglón especial de los artículos que dicha compañía fabrica. Su especialidad es la fabricación de varios aperos, y dedica especial atención á las desgranadoras de maíz. Empezó á fabricar una imperfecta desgranadora, y la ha mejorado de tal manera, que la Compañía posee ahora una de las instalaciones más importantes del mundo para la fabricación de desgranadoras de maíz. Estas desgranadoras no son especiales para Norte América, sino que se pueden adaptar para ser usadas en todos los países, según las distintas condiciones que tienen las diferentes clases de maíz, porque las desgranadoras deben poderse adaptar con perfección para la clase de maíz que se trata de desgranar.

La Compañía además de su gran surtido de desgranadoras de maiz, fabrica también cortadoras de pasto, moledoras de pasto, motores de caballo, sierras para madera, martinetes accelerados, molinos de viento, enseres para elevadores, cargadores de heno, aventadoras, tablas de palear, etc.

Su desgranadora de maiz de cilindro limpio New Process, que es la mayor que fabrica, tiene una capacidad de trabajo de 10,000 bushels de maiz desgranado por día, y trabaja con perfección. Se adapta para las distintas comarcas de este país y se fabrica en cuatro tamaños y estilos. Este aparato está protegido por patentes referentes á sus rasgos especiales.

La desgranadora de maiz de resorte Cyclone, es otra de las especialidades que esta Compañía recomienda por ser de mayor alcance de trabajo y tener menos cantidad de piezas que ninguna otra desgranadora de maíz de resorte, y por gastar menos fuerza motriz; contiene muchos importantes y nuevos rasgos. La agitadora de tusas de maiz, la canilla agitadora de granos, la correa con bisagras de pernos de hierro, la abastecedora forzada de cadena, la abastecedora forzada Cyclone, han sido todas patentadas. Todo el surtido completo de desgranadoras fabricadas por esta Compañia, contiene más de 150 tamaños y estilos, es decir que la Compañia fabrica todas las clases de desgranadoras conocidas.

Un surtido completo de motores de caballo de todos tamaños y estilos, es igualmente fabricado por la Compañia, desde el simple motor para un caballo hasta el pesado motor Hercules, de doce caballos y triple engranaje, que se adapta á toda clase de maquinarias.

En el ramo de moledoras de pasto, merece especial mención su moledora de engranaje, para usar con motor de caballo, sus moledoras de correa para pasto, sus motores de vapor y otros motores de correa, la moledora Marseilles de triple engranaje, que muele maiz en mazorcas, y la moledora de escoba Advance. Un aparato de forma especial apellidado "cadillo" (que es un procedimiento especial para cortar el grano), es usado con buen éxito, y hace muy populares dichos aparatos. Ellos cortan el maíz sin aplastarlo, y surten el mismo efecto en la molienda de trigo y de avena y de granos separados ó mezclados, y no sufren cuando funcionan estando vacíos.

También fabrica esta Compañía un surtido completo de molinos de viento, de varios tamaños, y otro surtido completo de torres para molínos de viento, tanto de madera como de acero. Asimismo, ruedas con piezas de madera, ruedas de acero Reina pintadas ó galvanizadas, y ruedas de acero Princesa pintadas ó galvanizadas. Entre sus demás manufacturas, están todas las clases de enseres para elevadores, y todos los artículos referentes al comercio de elevadores También fabrica la Compañia las aventadoras de guisantes, para almacenes y quintas. Estas están construidas todas ellas con el fin de combinar la fuerza con la duración, y reunen en si mismas todas las últimas mejoras en materia de cedazos. Se ha establecido su venta en gran escala en Australia, Tasmania, Nueva Zelanda y casi todas las otras colonias inglesas, así como en el Sud de Africa, Mexico, Alemania, Holanda y algunos puntos de Africa, y otros países. No es aventurado afirmar que no se fabrica maquinaria alguna más fina en todos los Estados Unidos.

Al pedir datos con referencia á la clase de trabajo de cada una de estas máquinas, deberá el corresponsal estipular la clase degranos que desea limpiar, puesto que de ello depende el precio de venta.

Todas las maquinarias arriba mencionadas han sido despachadas por la Compañia á casi todas las partes del mundo, donde hay demanda por maquinarias agrícolas, especialmente de desgranadoras de maíz, por manera que su larga experiencia de los mercados extranjeros les ha dado los datos necesarios para adaptar sus aperos á las necesidades de cada país en especial, para poder beneficiar el maíz de cada comarca.

Las sucursales de esta Compañia se encuentran en todos los principales puntos de distribución de los Estados Unidos, y también en la cindad de Méjico y en la de Buenos Aires. Por todas esas oficinas subalternas serán atendidos las preguntas y los pedidos que se les hagan, bien que el cuartel general sea la oficina de Marseilles, Estado de Illinois, Estados Unidos de Norte América.

Por la primera vez, en la historia de los Estados Unidos se ha colocado este país en primer término por el monto de sus exportaciones.

The PROCESSION and the RACE

You will find in your business as in ours that there are two kinds of competition. There is competition which fights you idea with idea, the best idea winning. Then there is the alleged competition which does what you do as closely as it dares, and as quickly as it can.

The Walter A. Wood Company has met both kinds, but mostly the latter. All the good, new, practical ideas in the Wood machines have been copied to some extent, but imitation is not competition.

A procession is not a race. As long as we lead we do not care who follow, nor, as long as they follow, how closely they follow.

The point is that your customers want the best, know the best and will have the best, and your interest and ours are identical. Let us sell them the best.

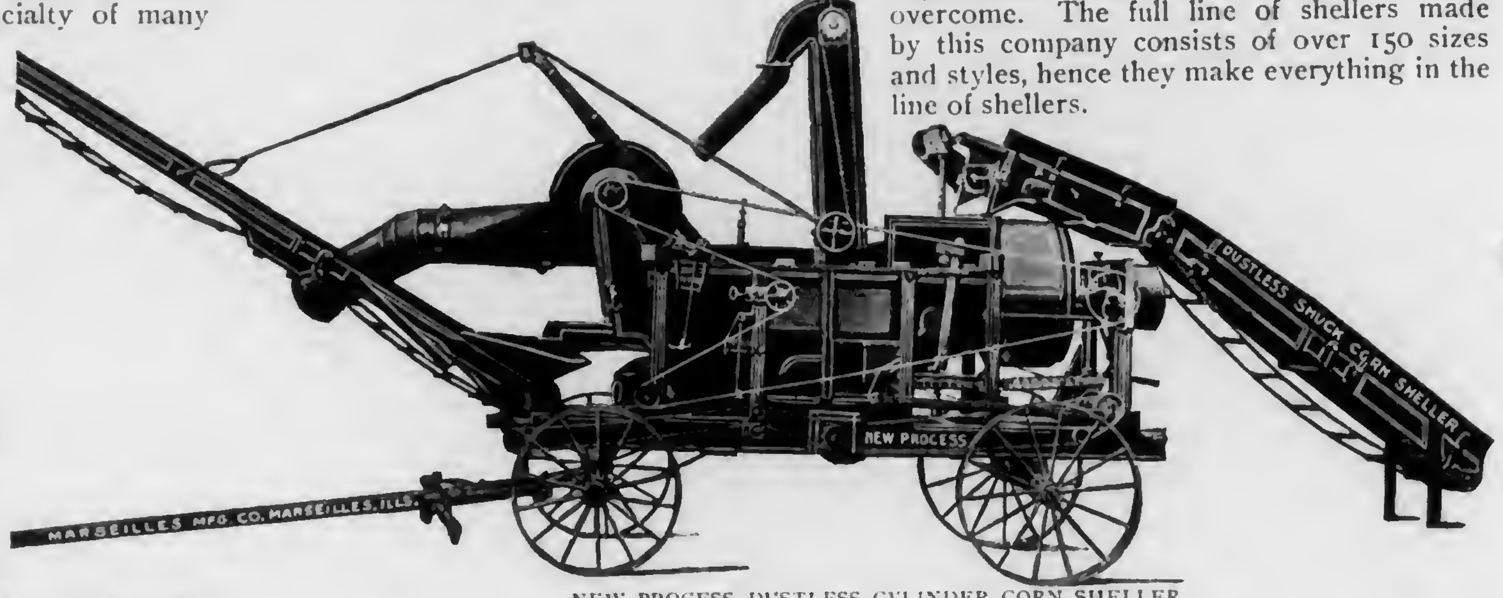
WALTER A. WOOD Mowing and Reaping Machine Co. Hoosick Falls, N. Y.

CHARLES AUSTIN BATES N.Y.

MARSEILLES MANUFACTURING COMPANY.

In this issue we illustrate views of the works of the Marseilles Manufacturing Co., of Marseilles, Ill., U. S. A., as well as a partial line of the goods made by them. This company makes a specialty of many implements, but they have given particular attention to corn shellers. Beginning with the crude corn sheller, they have so improved it until they now have one of the largest corn sheller plants in the world. These shellers are not made particularly for America, but are adapted to the work required in all countries, as corn varies in many particulars, according to variety, etc., and hence the sheller, to be effectual, must be suitable for the work required.

In addition to their large line of corn shellers, they also manufacture feed cutters, feed grinders, horse powers, wood saws, speed jacks, wind mills, elevator supplies, hay loaders, fanning mills, shoveling boards, etc.


MARSEILLES MFG. CO. MARSEILLES, ILLS.
NEW PROCESS
DUSTLESS SHUCK CORN SHELLER

NEW PROCESS DUSTLESS CYLINDER CORN SHELLER.

NEW PROCESS DUSTLESS CORN SHELLER.

Their New Process dustless cylinder corn sheller, their largest size, has a capacity of over 10,000 bushels of shelled corn (maize) per day, and does its work perfectly. It is adapted to different sections of the country. and is made in four sizes and styles. The manufacturers claim that this machine, during the past year, when fitted with the special chuck separator, invented by Mr. J. Q. Adams, was the only one that would successfully handle the snapped or unhusked corn raised in the Southern States, where it was extensively used. It is an indispensable machine in the great corn belt of the United States, and is making a record for itself in foreign countries. It is covered by patents on its special features.

CYCLONE SPRING CORN SHELLER.

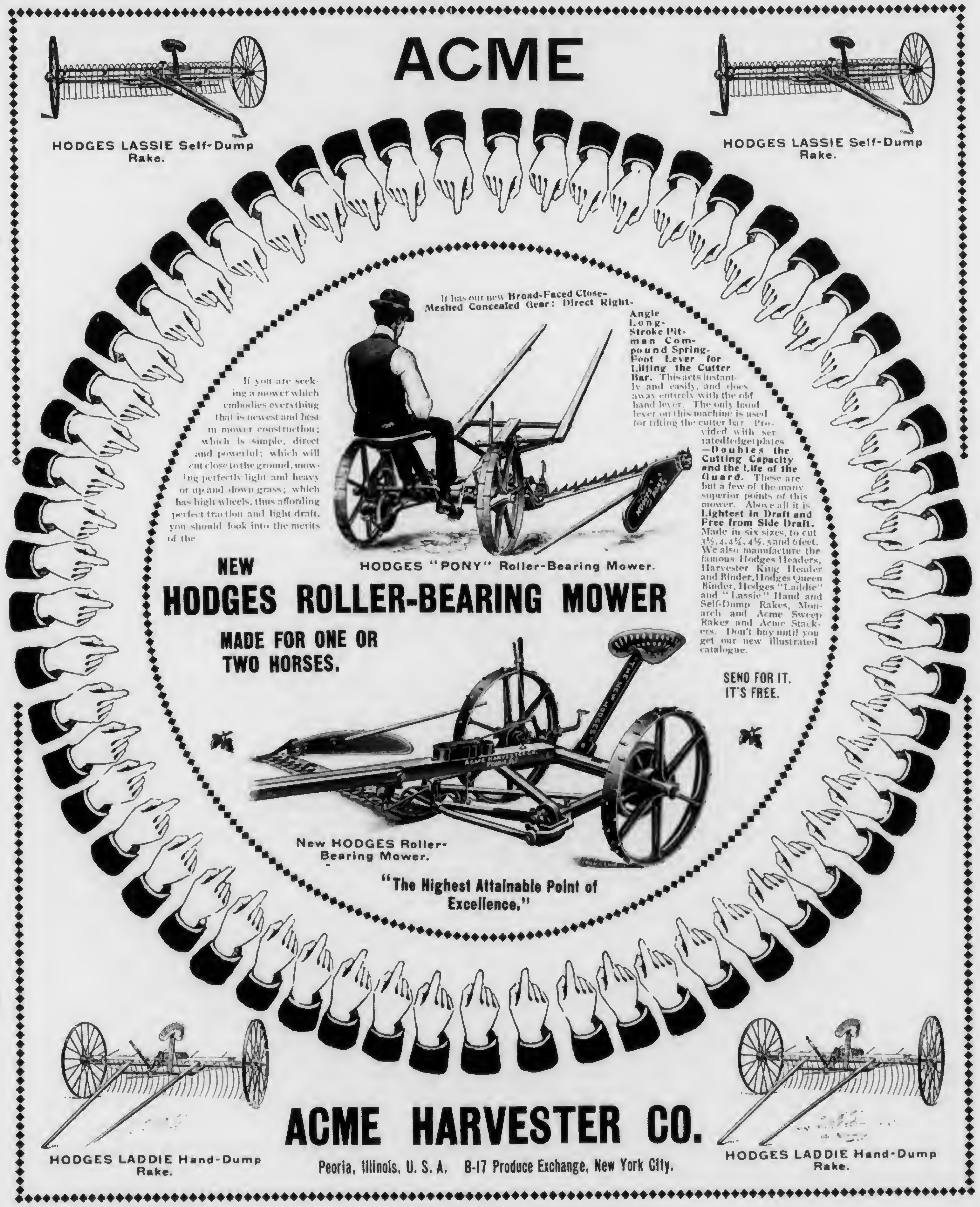
The Cyclone spring corn sheller is one of the specialties which the company claims has a larger capacity and fewer parts than any other spring corn sheller, while less stacker, the swinging grain spout, the hinged power is used, and it contains many important and novel features. The swinging cob rag iron strap, the chain force feed, and the Cyclone force feed have all been patented, the latter improvement being used by this company only, the company claiming that it forces the ears into the machine with less power and with one-third of the mechanism used on other powers. Clogging of the ears is impossible, as this difficulty has been entirely overcome. The full line of shellers made by this company consists of over 150 sizes and styles, hence they make everything in the line of shellers.

HORSE POWERS.

A complete line of horse powers is manufactured, and of all sizes and styles, from the simple one-horse power to the heavy twelve-horse Hercules triple-geared power, and which are adapted to all classes of machinery, being furnished with any required speed of tumbling rod, and a specialty is made of furnishing them for use with other machinery. Also, a complete line of speed jacks, for use with power, is made by them.

HOME OFFICE
AND FACTORY
—OF—
MARSEILLES MFG. CO.
MARSEILLES, ILL.
U.S.A.

(Continued on page 46.)


ACME

HODGES LASSIE Self-Dump Rake.

HODGES LASSIE Self-Dump Rake.

It has our new **Broad-Faced Close-Meshed Concealed Gear; Direct Right-Angle Long-Stroke Pitman Compound Spring-Foot Lever for Lifting the Cutter Bar.** This acts instantly and easily, and does away entirely with the old hand lever. The only hand lever on this machine is used for tilting the cutter bar. Provided with serrated ledger plates **—Doubles the Cutting Capacity and the Life of the Guard.** These are but a few of the many superior points of this mower. Above all it is **Lightest in Draft and Free from Side Draft.** Made in six sizes, to cut 3½, 4, 4¼, 4½, 5 and 6 feet. We also manufacture the famous Hodges Headers, Harvester King Header and Binder, Hodges Queen Binder, Hodges "Laddie" and "Lassie" Hand and Self-Dump Rakes, Monarch and Acme Sweep Rakes and Acme Stackers. Don't buy until you get our new illustrated catalogue.

If you are seeking a mower which embodies everything that is newest and best in mower construction; which is simple, direct and powerful; which will cut close to the ground, mowing perfectly light and heavy or up and down grass; which has high wheels, thus affording perfect traction and light draft, you should look into the merits of the

HODGES "PONY" Roller-Bearing Mower.

NEW
HODGES ROLLER-BEARING MOWER
MADE FOR ONE OR
TWO HORSES.

SEND FOR IT.
IT'S FREE.

New HODGES Roller-Bearing Mower.

"The Highest Attainable Point of Excellence."

HODGES LADDIE Hand-Dump Rake.

ACME HARVESTER CO.
Peoria, Illinois, U. S. A. B-17 Produce Exchange, New York City.

HODGES LADDIE Hand-Dump Rake.

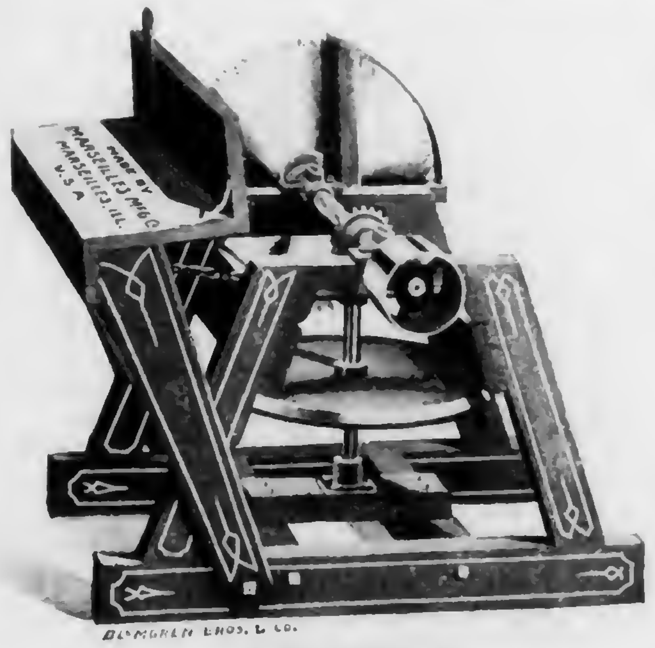
(Continued from page 44.)

FEED GRINDERS.

In their line of feed grinders may be mentioned the geared feed grinders, for use with horse power, belt feed grinders, for use with engines or other belt power, the Marseilles triple-geared grinder, which grinds corn (maize) in the ear and the Advance sweep grinder. A peculiarly-shaped bur (a special process of cutting the grain) is used successfully, and makes these burrs very popular. They cut without crushing the maize and are also effective in grinding wheat and oats, either alone or mixed grains, and are not injured when run empty.

WIND MILLS.

This company makes a complete line of wind mills, in various sizes, and a complete line of wood and steel wind mill towers. Also, wood section wheels, steel queen painted or galvanized wheels, and the steel princess painted or galvanized wheels.


MADE BY MARSEILLES MFG. CO. MARSEILLES, ILL. U.S.A.
BLOMGREN BROS. & CO.

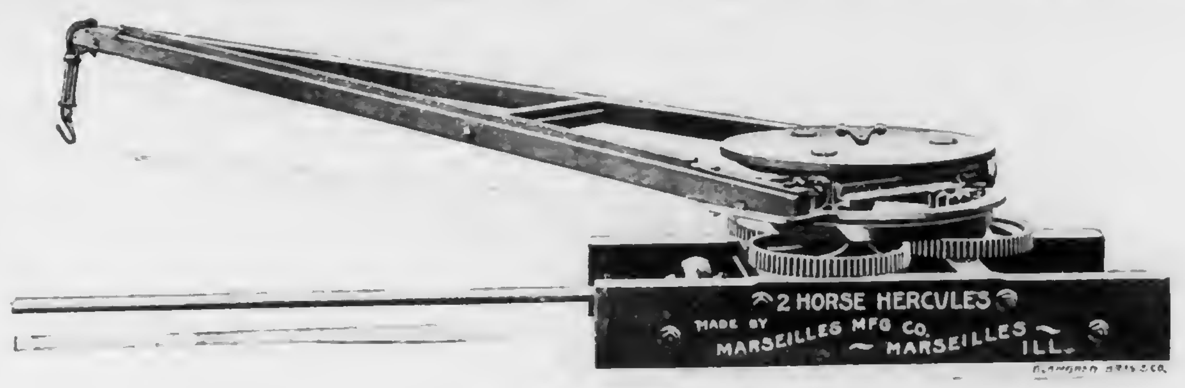
POWER WOOD SAW.

ELEVATOR SUPPLIES.

The elevator supply business of the E. H. Pease Manufacturing Co., of Racine, Wis., has been absorbed by the Marseilles Manufacturing Co., and embraces the manufacture of elevator cups, boots, heads, spouts, and all shafting, belting, and such other items as are sold to the special elevator trade. The Marseilles Company is now fully prepared to supply any demand, at any time, and for any thing in the elevator supply line.

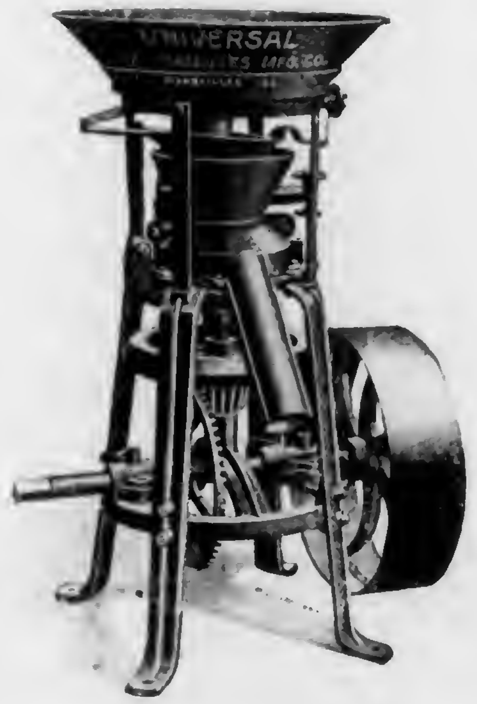
FANNING MILLS.

When the Marseilles Manufacturing Co. bought the business of the E. H. Pease Manufacturing Co. in July, 1900, and consolidated the same with the business of their factory at Marseilles, they continued there the manufacture of the world-renowned Pease farm and warehouse fanning mills. Thousands of these machines have been exported to various parts of the world by such well-known houses as that of Peabody & Co., and others, who will readily attest the superiority of the goods. At the World's Fair of 1893, at Chicago, Ill., these machines were selected on account of excellence, and used exclusively in cleaning all grains and seeds exhibited by the State of Illinois on that occasion. They are constructed with a view to strength and durability, combining within themselves all the latest improvements in sieving apparatus. A large sale of them has been established in Australia, Tasmania, New Zealand and nearly all of the other British colonies, as well as in South America, Mexico, Germany, Holland, portions of Asia, and other countries. It is safe to claim that no finer machinery in this line is made in the United States.


2 HORSE HERCULES
MADE BY
MARSEILLES MFG CO.
MARSEILLES ILL.

HERCULES HORSE POWER

When corresponding with reference to the purpose of these machines the writer should specify each and every kind of grain and seed he wishes to clean, as this governs the selling prices.



UNIVERSAL FEED GRINDER.

The Marseilles Manufacturing Co. has had a very satisfactory foreign trade during the past few years, being particularly active in both their Cyclone force-feed spring corn shellers, and their New Process cylinder shellers, their line of Diamond anl Favorite hand-corn shellers, their Farmer table-feed hand or power corn shellers (fitted with a small horse power), and their line of small horse powers and wind mills.

They have shipped the above mentioned goods to nearly every part of the world, where there is any demand for agricultural machinery, and on corn shellers especially, their long experience with the foreign trade has enabled them to adapt their machines especially to each particular country, in order to handle the maize or corn of such country.

During the past year they have sent several of their large New Process cylinder shellers into Australia, and recently received a letter from their agents in which they state that the machines had been given a thorough trial and had done their work in a manner which surpassed the agents' most sanguine expectations. In South America, also, they have had a long and satisfactory trade on these machines, which bids fair to assume large proportions. They have also shipped the machines in smaller lots into all of the corn raising countries of the Eastern Hemisphere, and said machines have been entirely satisfactory. Their hand shellers have also seemed to give special satisfaction wherever they have been sent.

BRANCH HOUSES.

The branch houses of this company are located at all the principal distributing points, among the leading United States cities where they have general agencies being Council Bluffs, Cedar Rapids and Sioux City, Iowa; Peoria, Ill.; Minneapolis, Minn.; Monroe, Mich.; Kansas City, Mo.; Louisville, Ky.; Dallas, Texas; Los Angeles, San Francisco and Sacramento, Cal.; Spokane, Wash.; and Baltimore, Md. Also in the City of Mexico, Mexico, and Buenos Ayres, Argentine. Inquiries or orders are attended to from any of these points, but the main office, at Marseilles, Ill., is the headquarters.

FAVORITE HAND SHELLER.

LIGHT RUNNING

PLANO

Binders
Mowers
Reapers
Headers
Hay Rakes
Sickle Grinders

The Most Simplified and Perfect Line of Harvesting Machines in the World

Carried Away the Honors of '99

Thousands of live dealers doubled and trebled their trade with it during the season of 1900, and it will double yours in 1901.

MADE BY THE PLANO MFG CO. CHICAGO U.S.A.

"In a contest with twelve other mowers, on the largest ranch in the United States, covering an area of 260,000 acres, the Jones Chain Mower won first place for light draft and perfect work."—*R. M. Pogson, Te Jon Rancho's, Cal.*

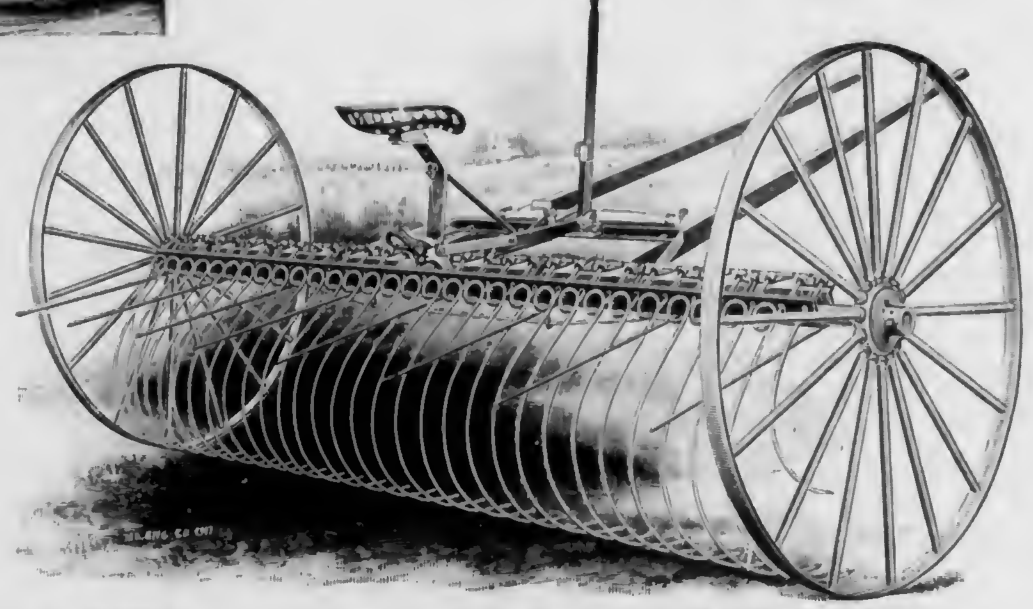
THERE IS NO MOWER
AS GOOD AS THE

Jones Chain Drive

It is the Embodiment of Simplicity, Durability and Perfection. It has openly Challenged the World for Years, and will build up a Trade for any Dealer, in any country.

The Jones Reaper is the most Perfectly Adjustable and only Spring-Balanced Reaper made.

The Jones Lever Binder is the Acknowledged Triumph of the Age



The Jones Adjustable Hay Rake has no equal as a Seller and a Worker, The only Adjustable Hay Rake made.

Write for Descriptive Catalogue

The Plano Manufacturing Company
CHICAGO, ILL., U.S.A.
115 Southwark Street - LONDON, S. E., ENGLAND

WIND MILLS AND WATER SUPPLY GOODS.

The demand for wind mills, irrigating outfits, and water supply goods of every description the last year, has been something marvelous, and without a doubt will exceed all previous sales records. They are constantly growing in favor with the farmer, planter, florist, gardener, suburbanite and ranchman, and at this time there are thousands in operation where not a single one could be found a few years ago.

STEEL STAR BACK-GEARED WIND MILL.

The Star wind mills, manufactured by the Flint & Walling Manufacturing Company, Kendallville, Ind., U. S. A., are conceded to be among the best for all purposes. They are patterned after the lines of the most approved mechanics, are constructed from the very best of material, and will perform all the different kinds of service to which the modern wind mill is subjected.

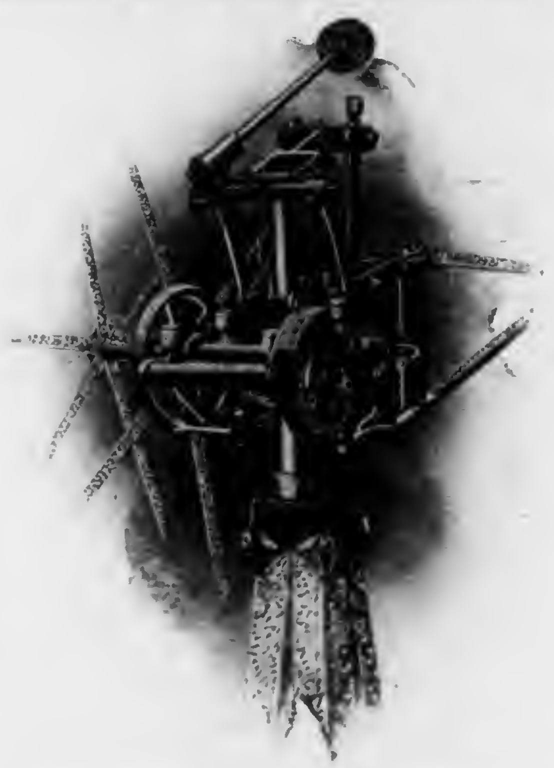
The accompanying engravings illustrate the galvanized steel Star back-geared wind mill, in which new features and old qualities are combined to make it better than ever before and superior to many others. It is claimed to be the lightest running, most durable and best-designed mill now offered to the public. The shafts are of cold-rolled, polished steel, operating in long journals of high-grade babbitt metal. The connecting rod, or pitman, is babbitted both ends, and all parts subject to severe strain are forged of wrought iron. The rocker-arm, or walking-beam, connected with the pitman and pump rod, gives the latter a perfect vertical motion without strain. The governing device is controlled by a series of levers which are easily operated, requiring little force to pull the mill out of the wind. The brake is attached directly to the hub of the wind wheel, thus insuring absolute control over the same.

This company is prepared to furnish Star wind mills in sizes from 4 to 26 feet in diameter, either galvanized steel or wood, everything in the line of iron pumps, towers, tanks, tubular well tools and water supply goods, and attention is called to their advertisement that appears elsewhere in these columns. Catalogues furnished on application in either English, German, French or Spanish.

Mexican houses which distribute goods throughout Northern Mexico especially will discover, ere long, increasing facilities for transportation of goods between their country and Chicago.

A SPANISH CATALOGUE.

The well-known firm of James Leffel & Co., builders of steam engines and boilers and water wheels, Springfield, Ohio, has recently issued a new Catalogue "I," in Spanish, fully illustrating and describing their line of engines and boilers. It is gotten out in excellent shape, rendering it specially well adapted for export business, and is standard size, 6 by 9 inches, containing forty pages. The illustrations, with accompanying descriptive matter, are quite plain, and the specifications are complete. Dimensions are given in the metric system, and price list is embodied in the pamphlet itself, rendering same easily understood by the ordinary foreign purchaser. Copy may be had free, on application to the company, at the foregoing address, stating plainly what is wanted.



MECHANISM OF STEEL STAR BACK-GEARED WIND MILL.

The report that a great plow trust is to be organized in the United States has no foundation.

THE
BEST MANUFACTURING CO.'S
STEAM TRACTION
ENGINE FREIGHTING TRAIN

Engine 50 H. P. Speed, 3 Miles per hour. Freight Carrying Capacity of Wagons, 12 Tons Each. Total Freight Carrying Capacity of Train, 50 Tons. Also make Wagons with Capacity of 16 and 18 Tons.
Engine and Wagons are specially designed for Steam Freighting.

Over 100 of these Traction Engines in successful use on this Coast.
Will reduce the cost of transportation per ton at least one-half, and in many instances two-thirds.
Grades 5 per cent. to 20 per cent. are easily taken with the Engine hauling loads from 30 to 50 tons.
Send for descriptive Catalogue and Price List.
Estimates made for complete Steam Freighting Outfits.

ADDRESS
THE
BEST
MFG.
CO.
San Leandro,
California,
U. S. A,

Chrysanthemum Harvesting in Japan

The Japanese may not harvest Chrysanthemums in this manner but they certainly could.

We know however that the progressive farmers of the world harvest with DEERING IDEAL BINDERS, MOWERS, REAPERS & HAY RAKES
AND THAT
DEALERS WHO HANDLE DEERING LIGHT DRAFT IDEALS ALWAYS HAVE A PROSPEROUS HARVEST.

"IT PAYS TO BE A DEERING AGENT."

DEERING HARVESTER COMPANY
(A COPARTNERSHIP)
CHICAGO
U.S.A.

CARS, TRUCKS, CARTS, ETC.

The Kilbourne & Jacobs Manufacturing Co., Columbus, Ohio, U. S. A., manufacture a large line of goods which are in demand in all countries, and their immense factory gives them the capacity to make goods in any quantity and with the assistance of the most improved machinery.

They have several catalogues (really books) illustrating and describing their goods. General catalogue No. 30 contains detailed descriptions of their drag and wheel road scrapers, bolted wheelbarrows of all kinds, contractors' railroad and grading plows, contractors' railroad and farm dump carts, wrought steel sinks, pressed steel shop pans, etc.

Catalogue No. 31 describes small cars of all kinds, including steel, ore and mine cars and skips, factory, foundry, billet, coal and coke cars, railroad hand and push cars, coke buggies, etc.

Catalogue No. 7 describes their line of trucks, all styles, two and four-wheeled; also baggage barrows, express wagons, grain or meat wagons, brick cars, push carts, skids, hand push cars, store, warehouse, railroad, hotel, dry goods, carpet, wagon and leather trucks of all kinds are given. These goods are of great variety and can only be appreciated by reading their catalogues.

The goods made by them are of a class that must wear and give service, as they are subject to severe tests when in use. The long experience of the Kilbourne & Jacobs Manufacturing Co. has given them opportunities for adopting all the modern improvements, and only the best materials are used, which is always necessary where durability is the chief quality, although they also combine finish and the latest labor-saving devices.

The company is one of the leading concerns in the world, their goods being sold in all countries. They have unusual facilities for turning out first-class work, and their reputation is such as to give their goods a leading position.

Dealers who handle these goods will have varied lines for the use of their customers, and as every article shipped by the company is thoroughly examined before leaving the factory those who use their goods always receive satisfaction.

Their catalogues will be sent free upon application. Always mention the numbers of the catalogues desired. One or all will be sent to any address.

MOWERS FOR EUROPE.

The Emerson Manufacturing Co., Rockford, Ill., U. S. A., are getting ready for a shipment of 1000 mowers for their European trade. The machines have been in course of construction for some time and the first lot is about to start on its journey. The mowers are shipped direct to wholesale houses and jobbers in both England and Germany, from which points they are distributed to all sections of Europe. The Emerson machines are scattered throughout the different European countries and the present shipment will merely be an addition to the number now in use in Europe.

LARGE EXPORT OF WHEELS.

An unusually heavy shipment of metal wheels was made recently by the Bettendorf Metal Wheel Co., Springfield, Ohio, U. S. A., consisting of forty cars of wheels to Toronto, Canada, and fifteen carloads to Smith's Falls. The company is doing a heavy business at present and is employing about 160 men in all the departments. The shops are using about fifteen or twenty carloads of raw material every ten hours, and are turning out about 60 tons of finished wheels in the same time.

SENT TO CHINA.

The McSherry Manufacturing Co., of Middletown, Ohio, U. S. A., shipped, on December 22, Hong Kong, for the Far Eastern trade, 36 disc harrows and 40 11-foot seeders, it being the third shipment of this kind to the same port in the past three years.

WON SILVER MEDAL.

The Walter A. Wood Mowing and Reaping Machine Co., Hoosick Falls, N. Y., are in receipt of a communication from their Melbourne office advising them that at the Jubilee Metropolitan Canterbury show, held in New Zealand (which has surpassed all others held in that colony), the Walter A. Wood binder (the judges being Prof. Scott, engineering and mechanical expert of Canterbury College, and Mr. Richard Trout, manager for Mr. John Grigg, of the world-famed "Long Beach Estate") was awarded a silver medal, being the only medal granted to any binder on the ground. Other binders were also in competition.

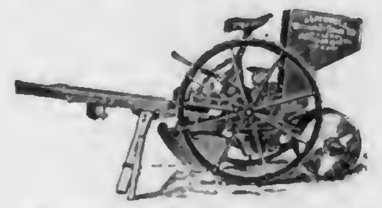
IMPLEMENTS FOR RUSSIA.

The Warder-Bushnell & Glessner Co., Springfield, Ohio, U. S. A., recently shipped to New York thirty cars loaded with binders, reapers and mowers. These goods were to be forwarded to Novorossick, Russia, the new field which the company is opening up. This is the largest shipment ever made by the company to Southern Russia. It will soon be followed by more. American harvesters are considered well adapted to Russian grain growing.

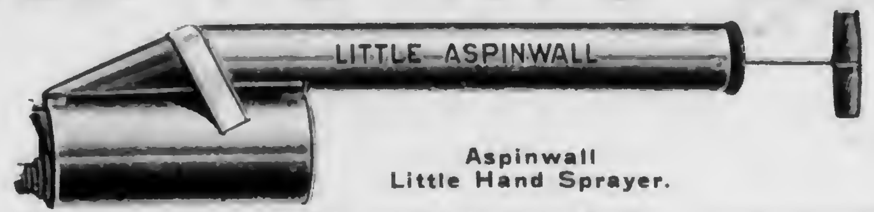
WAGONS FOR EXPORT.

The O. S. Kelly Co., Springfield, Ohio, U. S. A., have secured the contract to build eighteen of the largest wagons ever built in Springfield, and perhaps the largest ever built in the United States. These wagons are to be shipped to the English Mining Co., in Mexico, and are to be utilized for transferring pig iron and ore where there are no railroads in that section of the country. The description of the wagons is marvelous to think of. They weigh twenty tons each complete to hitch to. Each wagon is made of nearly all iron. The two rear iron wheels are eight feet high and each wheel weighs 2000 pounds. The brake, or rublock, is very powerful and easy to manipulate from the rear end of the wagon. The wagon bed is twenty-five feet long, five feet high and five feet wide, and in this bed eleven tons of coal or pig iron can be loaded.

ASPINWALL POTATO MACHINERY

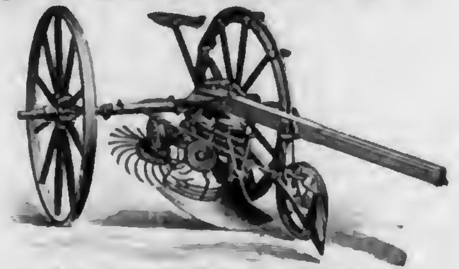


Aspinwall Potato Planter.



Aspinwall
Little Hand Sprayer.

Reputation established. Over twenty years on the market. Used and indorsed by thousands the world over. We also make Barrel Churns, Lawn Swings, Post Hole Diggers and Weeders Write for catalogues and prices.



Aspinwall Potato Digger.

Maquinaria "Aspinwall" Para Patatas (Papas).

Bien sentada Reputación en el espacio de Veinte Años en el Mercado. Usadas y Recommendadas por millares de parroquianos en todo el mundo. Fabricamos tambiém Mantequilleras de Barril—Columpios de Linón—Abridoras de Agujeros y Escardillas. Escribase pidiendo Catálogos y piecios.

Appareils Aspinwall Pour Traitement des Pommes de Terre.

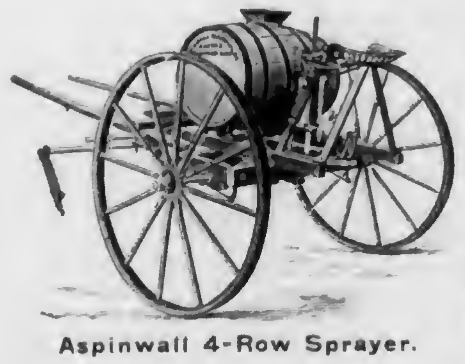
Réputation établie dans le Commerce depuis plus de vingt ans. En usage et en faveur chez des milliers de clients dans le Monde entier. Nous fabriquons également des Barattes à beurre—Balançoires de Pelouse—Appareils pour planter les Poteaux, et Sarcloirs, à mauvaises herbes. Demander par lettre les Catalogues et Prix Courants.

"Aspinwall" Kartoffele-Grate.

Stehen seit uber zwanzig Jahren im Handel in bestem Rufe. Sie werden in der ganzen Welt von Tausenden benutzt und emploblen. Wir fabriziren auch Butterfasser, Schaukeln, Pfostensetzer und Jater. Kataloge und Preisliste gratis und franco.

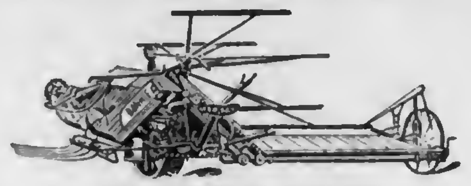
DEPT. B.

ASPINWALL MANUFACTURING CO., Jackson, Mich., U.S.A.

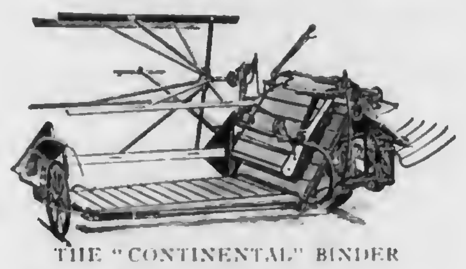


Aspinwall 4-Row Sprayer.

Aspinwall Sorter.

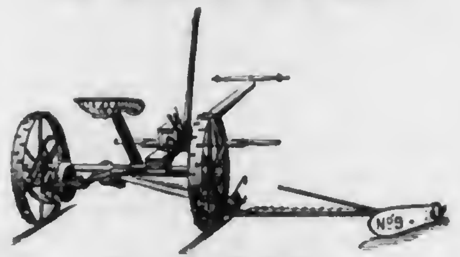


THE "BONNIE" BINDER

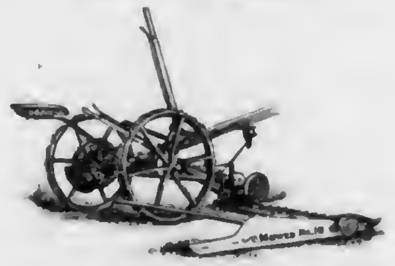


THE "CONTINENTAL" BINDER

THE "CONTINENTAL" REAPER.



No. 9 CHAIN MOWER.



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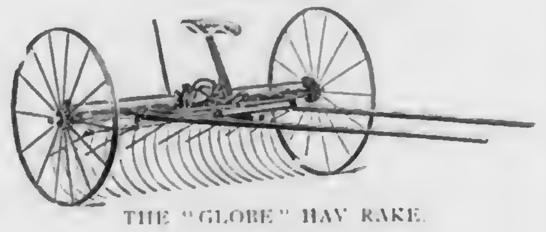
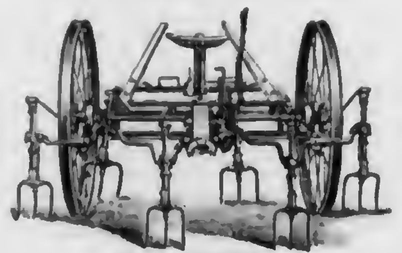
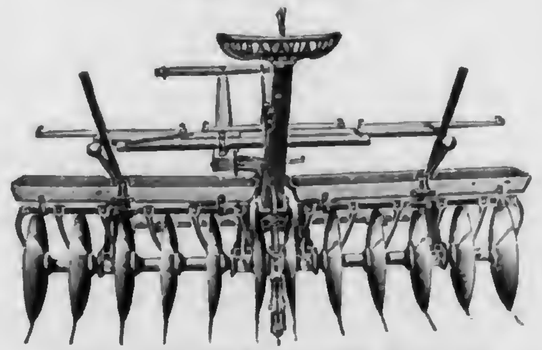


THE "GLOBE" HAY RAKE.



HAY TEDDER



THE "CONTINENTAL" DISK HARROW

Binders
Reapers
Mowers
Hay Rakes
Hay Tedders
Disk Implements

THE JOHNSTON HARVESTER CO.
BATAVIA, NEW YORK, U. S. A.

EUROPEAN OFFICE: 148 Boulevard de la Villette, PARIS.

AWARDED GOLD MEDAL PARIS EXPOSITION, 1900.

Byron E. Huntley, President, created by the French Government Chevalier of the Legion of Honor.

AMERICAN WIRE AND NAILS.

Nearly 4000 tons of wire were sent out of Eastern United States ports for various foreign countries by the American Steel and Wire Co. during one month. The largest and most numerous shipments were forwarded to South American ports, seventeen consignments, aggregating no less than 2675 tons, going to different points in that country, according to the "Commercial Bulletin." Buenos Ayres took 1347 tons in five lots, the largest single shipment being 630 tons. Valparaiso was dispatched one shipment of 601 tons. Santos was a purchaser of 261 tons in three lots. Two hundred and forty tons, in three shipments, were consigned to Santos, while San Rosario took 203 tons in two shipments. Other South American buyers were Bahia, which port took 56 tons in two shipments, and Pernambuco was shipped a single lot of 30 tons. There were also two shipments, amounting to 238 tons, to South African ports. Continental Europe took 223 tons, made up as follows: Antwerp, 100 tons; Hamburg a single shipment of 100 tons, and Christiania 23 tons. The Australian shipments made up a total of 232 tons to Melbourne. Great Britain purchased 220 tons in eight lots. Seventy-two tons of wire were forwarded to Manila, while similar lots were dispatched to Hong Kong, Havana and Singapore. The company's foreign shipments of wire nails during the past thirty days aggregated 1800 odd tons. The two most important shipments went to Valparaiso and Genoa,—the Chilean port taking 512 tons in one lot, while 263 tons were forwarded in a single shipment to the Italian city. This is said to be the largest shipment of wire nails ever sent to Genoa. A consignment of 350 tons went forward to China. The shipments to the United Kingdom were above the average,—200 tons going to various points. Singapore was forwarded 114 tons in two consignments, and Calcutta and Bombay took 65 tons between them. Next to Genoa, the largest purchaser in Continental Europe was Hamburg, that port taking 155 tons in two lots. Other shipments included those of some 20 tons each, which were dispatched to Tampico, Rio Janeiro, Melbourne and South Africa. These shipments show that the demand for American wire is not confined to any particular country, the goods being in demand everywhere.

BRANCH HOUSES.

The following American implement manufacturing companies have established branch houses at Minneapolis, Minn., U. S. A. (a large distributing point), during the past year: La Crosse Plow Co., of La Crosse, Wis.; the Empire Drill Co., of Shortsville, N. Y.; Frank J. Enger, of Cincinnati, Ohio; the Dempster Manufacturing Co., of Des Moines, Iowa; the Hooven & Allison Co., Xenia, Ohio; the Sandwich Manufacturing Co., of Sandwich, Ill.; the Acme Harvester Co., Peoria, Ill.; the Walter A. Wood Mowing and Reaping Machine Co., of Hoosick Falls, N. Y.; the Henney Buggy Co., of Freeport, Ill.; Haworth & Sons Manufacturing Co., of Decatur, Ill.; the Fountain City Drill Co., of La Crosse, Wis., etc. These are all leading American houses.

FOUR LARGE FACTORIES.

The Standard Wheel Co., Terre Haute, Indiana, U. S. A., manufacturers of the "Concord" wheel, have four factories. At Indianapolis, Indiana, U. S. A., they have added two brick buildings, one 40 by 210 feet and the other 40 by 60 feet, and installed a 1000-gallons-a-minute fire pump. They have also added $15,000 worth of the latest improved wheel machinery and have nine boilers. They claim the Indianapolis factory as the largest in the world for the manufacture of wheels. Their specialties are vehicle wheels and wheel material.

The Foos Manufacturing Co., Springfield, Ohio, U. S. A., have elected officers as follows: R. H. Foos, president; W. F. Foos, vice-president and treasurer; H. S. Bradley, secretary; W. E. Copenhaven, superintendent, and Carl Caskey, cashier.

VISITING AMERICA.

Mr. T. G. Slipper, of Brundall, Norwich, England, is visiting America, going through the immense factories. Mr. Slipper is an agricultural implement dealer, and handles a number of farm implements manufactured in America. Among the following firms who are represented by Mr. Slipper are: The Superior Drill Co., the Warder, Bushnell & Glessner Co., P. P. Mast & Co. and the P. S. Kelly Co., all of Springfield, Ohio, U. S. A.

Fire does not throw enterprising firms back. Last month the main factory of the E. W. Ross Co., Springfield, Ohio, U. S. A., was destroyed by fire. Other buildings were at once secured, orders are promptly filled, and in less than a week a larger factory was about to be built.

P. P. Mast & Co., Springfield, Ohio, U. S. A., held their annual election of officers and directors recently, at their general offices in that city. The officers are C. R. Crain, president and treasurer; C. C. Kirkpatrick, vice-president; J. W. Spahr, secretary. This company has made several important carload shipments recently to various parts of the West. They also have a large foreign trade.

Mr. Cornelius Dunlea, of the A. B. Farquhar Co., Ltd. (York, Pa., U. S. A.), died at his residence in New York city last month. He was well known as a manufacturer and exporter.

Mr. Francis Root Keating, manager of the Buffalo Pitts Co., Buffalo, N. Y., died January 7, 1901. The company has lost one of its most valuable officials, and the community an enterprising citizen.

Double Tube Lightning Insect **Exterminator and Sprayer**
with Detachable Glass Reservoir.

A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy and it does save time.

Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.

It is light, but well made; is cheap, and repairs, if needed, obtained in the smallest village.

Packed in cases of three dozen for foreign trade.

Circulars and prices free upon application.

H. W. DOUGHTEN, Moorestown, N. J., U. S. A.

Make Your Cow Comfortable

Protects Cows and Horses from torture by flies.
IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.

It is entirely harmless, and does not injure the coat of either cows or horses, and **it will keep flies from stock during the summer months.**

To be applied with a sprayer, but works best with our Double Tube Lightning Insect Exterminator and Sprayer.

Put up in one-gallon cans, one dozen cans to a box. Booklet and prices free upon application.

H. W. DOUGHTEN, Moorestown, N. J., U. S. A.

KING OF THE POTATO FIELD

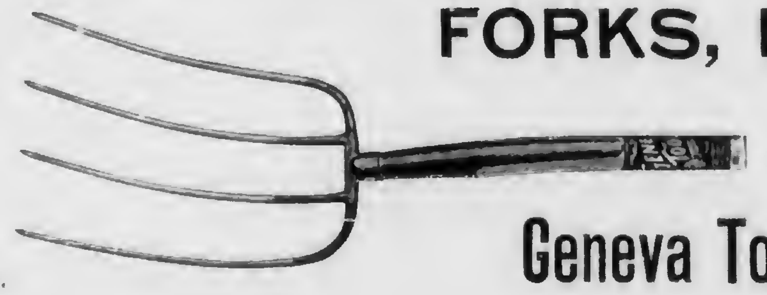
In Use in Potato Districts all over the World.

A DIGGER THAT DIGS.

Most simple in construction, yet combining every essential principle to make a successful machine. Reasonable in price and within the reach of the smallest and poorest farmer. Full and complete description, with prices, will be sent free upon application.

H. W. DOUGHTEN, Moorestown, N. J., U. S. A.

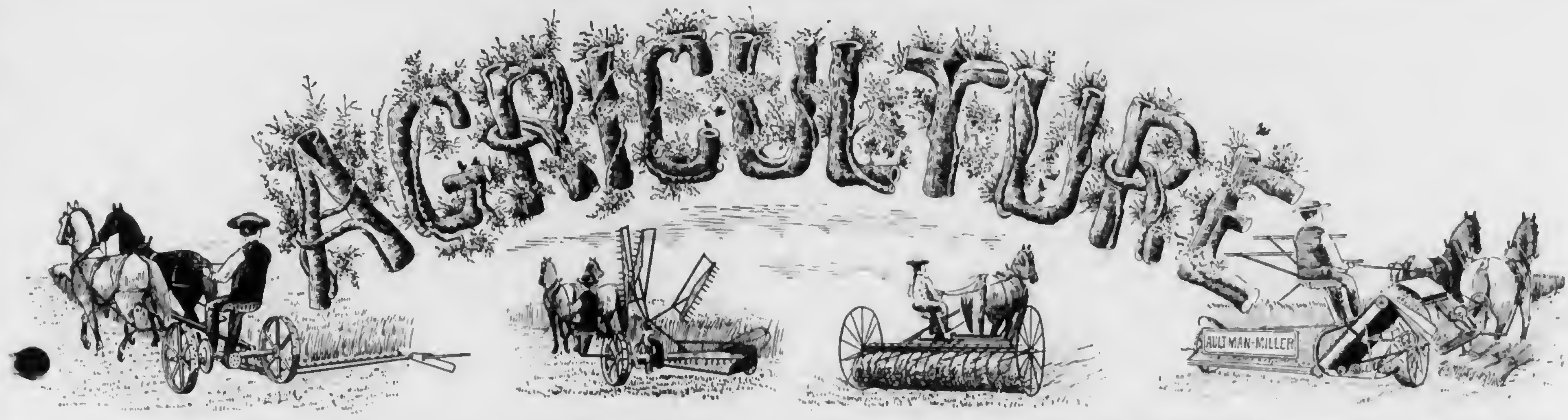
"GENEVA"
Leads, Others Follow,
in the Manufacture of Hand Agricultural Tools.
Highest quality. Largest variety.
Revised Illustrated Catalogue FREE on application.



FORKS, HOES, RAKES.

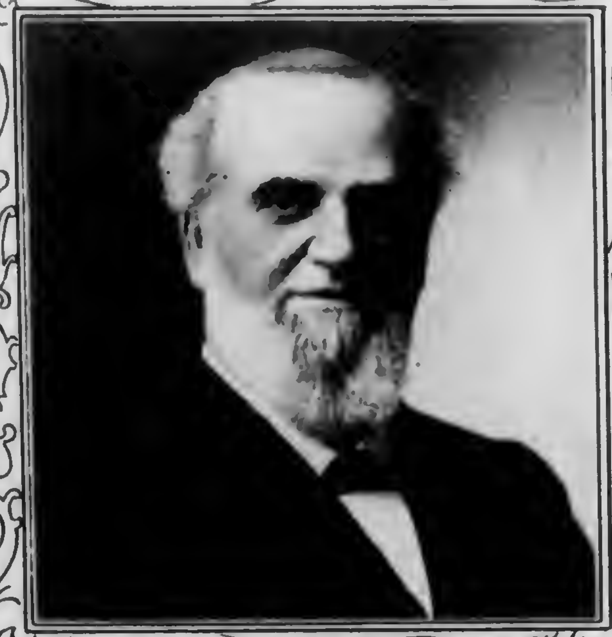
Every kind and of the most approved patterns. Adapted to all markets. If quality and price interest you, address

Geneva Tool Company, GENEVA, Ohio, U. S. A.



AGRICULTURE lies at the foundation of civilized well-being. Improved methods of sowing and reaping and bettered conditions of living always march hand in hand. Philanthropists assure us that mankind has had no greater benefactors than the creators of modern harvesting machines. Whosoever honestly and dispassionately seeks to know who those creators and inventors were will find the names of Aultman and Miller solidly imbedded in the foundations of the graceful arch that spans the field of modern Agriculture. They were the authors of the AULTMAN-MILLER BUCKEYE—denoting Harvesting Machines of the highest class produced by the hand of man.

CORNELIUS AULTMAN



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MOWERS	MÄHMACHINE	FAUCHEUSES
REAPERS	GETREIDE-MÄHMACHINE	MOISSONNEUSES
BINDERS, Etc.	GARBENBINDER, U. S. W.	MOISSONNEUSES-LIEUSES Etc.

ADDRESS

AULTMAN, MILLER & CO.

AKRON, OHIO (U. S. A.) (Vereinigten Staaten) (Etats-Unis).

DIRECTORY FOR BUYERS.

The names of firms given below, together with the goods mentioned, are arranged for the convenience of buyers. These establishments are among the leading ones in the United States, are strictly reliable, have extensive facilities and are prompt in transacting business. They fully understand the export trade and carefully look after all foreign orders. The "Export Implement Age" is kept on file in their offices, and any mention of the journal will be an incentive to even greater promptness on their part in obliging you. Inquiries from foreign buyers desiring information relative to American agricultural machinery or implements addressed to them will be given careful and prompt attention. Write in any language you prefer.

BALING PRESSES (Hay, Straw, Etc.).

Acme Harvester Co., Pekin, Ill.	15
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Collins Plow Co., Quincy, Ill.	16
Dederick Agricultural and Machine Works	29
DeLoach Mill Manufacturing Co., Atlanta, Ga.	6
Kansas City Hay Press Co., Kansas City, Mo.	39
Sandwich Manufacturing Co., Sandwich, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

BARBED WIRE.

American Steel and Wire Co., New York, N. Y.	25

BEET IMPLEMENTS (Planting, Cultivating and Harvesting).

American Harrow Co., Detroit, Mich.	26
Baker & Hamilton, San Francisco, Cal.	21
Bateman Manufacturing Co., Grenloch, N. J.	35
Deere & Mansur Co., Moline, Ill.	11
Geneva Tool Co., Geneva, Ohio	32
Iowa Farming Tool Co., Ft. Madison, Iowa	52
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Sheble & Klemm, Frankford, Philadelphia, Pa.	22
Superior Drill Co., Springfield, Ohio	2

BINDER TWINE.

Union Selling Co., New York, N. Y.	cover

BINDERS, SELF (Wheat, Rye, Oats, Etc.).

Acme Harvester Co., Pekin, Ill.	15
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Deering Harvester Co., Chicago, Ill.	19
Johnston Harvester Co., Batavia, N. Y.	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M., & Co., Auburn, N. Y.	36, 37
Plano Manufacturing Co., Chicago, Ill.	47
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	13

BRICK MACHINERY.

Martin Brick Machine Mfg. Co., The, Lancaster, Pa.	22

CARS (Steel Mine, Coal, Ore, Etc.).

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	9

CHURNS.

Aspinwall Manufacturing Co., Jackson, Mich.	50

CIDER AND WINE PRESSES.

Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Lansing Wheelbarrow Co., Lansing, Mich.	9
Mast & Co., P. P., Springfield, Ohio	12
Superior Drill Co., Springfield, Ohio	2
Whitman Agricultural Co., St. Louis, Mo.	6

CLOTHES WASHING MACHINES.

Boss Washing Machine Co., Cincinnati, Ohio	19

CLOVER THRESHERS AND HULLERS.

Birdsell Manufacturing Co., South Bend, Ind.	12

COAL CARS.

Lansing Wheelbarrow Co., Lansing, Mich.	9

COAL SHUTES.

Lansing Wheelbarrow Co., Lansing, Mich.	9

COFFEE HULLERS.

Salem Iron Works, Salem, N. C.	39

CORN PLANTERS (Hand).

Aspinwall Manufacturing Co., Jackson, Mich.	50
Ohio Cultivator Co., Bellevue, Ohio	4
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Wiard Plow Co., Batavia, N. Y.	11

CORN PLANTERS (Horse).

American Harrow Co., Detroit, Mich.	26
Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Case, J. I., Plow Works, Racine, Wis.	cover
Deere & Mansur Co., Moline, Ill.	14
Farquhar Co., The A. B., York, Pa.	35
Hench, Dromgold & Co., New York, N. Y.	16
Hoosier Drill Co., Richmond, Ind.	11
Keystone Farm Machine Co., Ltd., York, Pa.	3
McSherry Manufacturing Co., Middleton, Ohio	13
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17

CORN HARVESTERS.

Aultman, Miller & Co., Akron, Ohio	53
Deering Harvester Co., Chicago, Ill.	19
Johnston Harvester Co., Batavia, N. Y.	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Standard Harrow Co., Utica, N. Y.	7

CORN HUSKERS AND SHREDDERS.

Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deere & Mansur Co., Moline, Ill.	11
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Ross, E. W. Co., The, Springfield, Ohio	6

CORN SHELLERS (Hand).

Baker & Hamilton, San Francisco, Cal.	21
Buch's Sons, A., Elizabethtown, Pa.	8
Challenge Wind Mill & Feed Mill Co., Batavia, Ill.	1
Deere & Mansur Co., Moline, Ill.	11
Goulds Manufacturing Co., The, Seneca Falls, N. Y.	19
Hench, Dromgold & Co., New York, N. Y.	16
Huntley Manufacturing Co., Silver Creek, N. Y.	21
Keystone Farm Machine Co., Ltd., York, Pa.	3
Marseilles Manufacturing Co., Marseilles, Ill.	10
Patch, A. H., Clarksville, Tenn.	20
Ross, E. W. Co., The, Springfield, Ohio	6
Sandwich Manufacturing Co., Sandwich, Ill.	13
Standard Harrow Co., Utica, N. Y.	7
Stover Manufacturing Co., Freeport, Ill.	18
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

CORN SHELLERS (Power).

Baker & Hamilton, San Francisco, Cal.	21
Deere and Mansur Co., Moline, Ill.	14
Marseilles Manufacturing Co., Marseilles, Ill.	10
Sandwich Manufacturing Co., Sandwich, Ill.	13

CREAM SEPARATORS.

Sharples, P. M., West Chester, Pa.	cover

CULTIVATING MACHINERY (Hand and Garden).

Baker & Hamilton, San Francisco, Cal.	21
Bateman Manufacturing Co., Grenloch, N. J.	35
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buffalo Pitts Co., Buffalo, N. Y.	12
Deere & Co., Moline, Ill.	14
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Parlin & Orendorff, Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
Standard Harrow Co., Utica, N. Y.	7
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

CULTIVATING MACHINERY (Horse and Field).

American Harrow Co., Detroit, Mich.	26
Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Bateman Manufacturing Co., Grenloch, N. J.	35
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buffalo Pitts Co., Buffalo, N. Y.	12
Case, J. I., Plow Works, Racine, Wis.	cover
Deere & Co., Moline, Ill.	11
Deere & Mansur Co., Moline, Ill.	14
Farquhar Co., The A. B., York, Pa.	35
Hench, Dromgold & Co., New York, N. Y.	16
Johnston Harvester Co., Batavia, N. Y.	51
Keystone Farm Machine Co., Ltd., York, Pa.	3
Mast & Co., P. P., Springfield, Ohio	12
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Parlin & Orendorff, Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
Standard Harrow Co., Utica, N. Y.	7

DAIRY APPARATUS.

Sharples, P. M., West Chester, Pa.	cover
Baker & Hamilton, San Francisco, Cal.	21

ENGINES AND BOILERS (Stationary).

Farquhar Co., The A. B., York, Pa.	35
Hench, Dromgold & Co., New York, N. Y.	16
Leffel, James & Co., Springfield, Ohio	35
Salem Iron Works, Salem, N. C.	39
Sharples, P. M., West Chester, Pa.	cover

ENGINES (Traction and Portable).

Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Best Manufacturing Co., The, San Leandro, Cal.	48
Buffalo Pitts Co., Buffalo, N. Y.	12
Farquhar Co., The A. B., York, Pa.	35

FEED AND ENSILAGE CUTTERS.

Buch's Sons, A., Elizabethtown, Pa.	8
Challenge Wind Mill and Feed Mill Co., Batavia, Ill.	4
Ellis Keystone Agricultural Works, Pottstown, Pa.	3
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Marseilles Manufacturing Co., Marseilles, Ill.	10
McSherry Manufacturing Co., Middleton, Ohio	13
Ross, E. W. Co., The, Springfield, Ohio	6
Silver Manufacturing Co., Salem, Ohio	5

FEED TROUGHS.

Buch's Sons, A., Elizabethtown, Pa.	8
Clizbe Bros. Manufacturing Co., Chicago, Ill.	23

FENCING (Woven Wire).

American Steel and Wire Co., New York, N. Y.	25
Keystone Woven Wire Fence Co., Peoria, Ill.	21

FERTILIZER DISTRIBUTERS.

Aspinwall Manufacturing Co., Jackson, Mich.	50
Hoosier Drill Co., Richmond, Ind.	11
Keystone Farm Machine Co., Ltd., York, Pa.	3

GARDENING TOOLS (Hand).

Bateman Manufacturing Co., Grenloch, N. J.	35
Ohio Cultivator Co., Bellevue, Ohio	4
Parlin & Orendorff, Canton, Ill.	17

GAS ENGINES.

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	9

GATES.

Keystone Woven Wire Fence Co., Peoria, Ill.	21

GRAIN DRILLS.

Baker & Hamilton, San Francisco, Cal.	21
Bickford & Huffman Co., Macedon, N. Y.	35
Crown Manufacturing Co., Phelps, N. Y.	cover
Empire Drill Co., Shortsville, N. Y.	11
Farquhar Co., The A. B., York, Pa.	35
Hench, Dromgold & Co., New York, N. Y.	16
Hoosier Drill Co., Richmond, Ind.	11
McSherry Manufacturing Co., Middleton, Ohio	13
Mast & Co., P. P., Springfield, Ohio	12
Superior Drill Co., Springfield, Ohio	2

GRAIN CLEANING MACHINERY (Rice, Coffee, Grain, Etc.).

Buch's Sons, A., Elizabethtown, Pa.	8
Grant-Ferris Co., Troy, N. Y.	21
Huntley Manufacturing Co., Silver Creek, N. Y.	21
Johnson & Field Manufacturing Co., Racine, Wis.	21
Michael, C. H., La Porte, Ind.	24
Salem Iron Works, Salem, N. C.	39

GRAIN GRINDING MILLS.

Baker & Hamilton, San Francisco, Cal.	21
Challenge Wind Mill and Feed Mill Co., Batavia, Ill.	4
DeLoach Mill Manufacturing Co., Atlanta, Ga.	6
Flint & Walling Manufacturing Co., Kendallville, Ind.	18
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Litchfield Manufacturing Co., Webster City, Iowa	20
Marseilles Manufacturing Co., Marseilles, Ill.	10
Ross, E. W. Co., The, Springfield, Ohio	6
Sandwich Manufacturing Co., Sandwich, Ill.	13
Stover Manufacturing Co., Freeport, Ill.	18
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

HAND CARTS (Push).

Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deming Co., The, Salem, Ohio	cover
Goulds Manufacturing Co., Seneca Falls, N. Y.	19
Keystone Farm Machine Co., Ltd., York, Pa.	3
Lansing Wheelbarrow Co., Lansing, Mich.	9
Parlin & Orendorff Co., Canton, Ill.	17
Sandwich Manufacturing Co., Sandwich, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

(Continued on page 56.)

ADRIANCE

BUCKEYE

GRAND PRIX Highest Award **Paris Exposition 1900**

NO OTHER FIRM RECEIVED AT THE PARIS EXPOSITION FOR HARVESTING MACHINES (Class 35) HIGHER OR MORE AWARDS.

FIRST PRIZE in European Field State Trials, 1900.

European Agency of Adriance, Platt & Co., F. Mink, Hamburg, Artushof. Paris, Quai Valmy, 159 BIS.

DIRECTORY FOR BUYERS—(Continued from page 54).

HAND TOOLS (Shovels, Rakes, Hoes, Scythes, Forks, Etc.).

Geneva Tool Co , Geneva, Ohio . .	52
Harper, Smith & Sons, Philadelphia, Pa. .	22
Iowa Farming Tool Co , Ft. Madison, Iowa	22
Jenkins Iron and Tool Co., Howard, Pa. .	22
Rowland's Sons, T., Philadelphia, Pa.	22
Sheble & Klemm, Frankford, Philadelphia, Pa.	22
Utica Tool Co., Utica, N. Y. . . .	22
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Wyoming Shovel Works, Wyoming, Pa . .	22

HARROWS (Disc, Spring-Tooth and Spike-Tooth).

Adriance, Platt & Co., Poughkeepsie, N. Y.	55
American Harrow Co., Detroit, Mich. . .	26
Baker & Hamilton, San Francisco, Cal. .	21
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buch's Sons, A., Elizabethtown, Pa.	8
Buffalo Pitts Co., Buffalo, N. Y. .	12
Case, J. I., Plow Works, Racine, Wis.	cover
Collins Plow Co., Quincy, Ill.	16
Cutaway Harrow Co., Higganum, Conn.	58
Deere & Co., Moline, Ill.	14
Deere & Mansur Co., Moline, Ill. .	11
Hench, Dromgold & Co., New York, N. Y.	16
Johnston Harvester Co., Batavia, N. Y.	51
Keystone Farm Machine Co., Ltd., York Pa	3
Lean Manufacturing Co , Roderick, Mansfield, Ohio	21
McSherry Manufacturing Co., Middleton, Ohio	13
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
South Bend Chilled Plow Co., South Bend, Ind	20
Standard Harrow Co., Utica, N. Y.	7
Thomas Manufacturing Co., Springfield, Ohio	8
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Wiard Plow Co., Batavia, N. Y.	11

HATCHETS.

Jenkins Iron and Tool Co., Howard, Pa.	22

HAY TOOLS (For Handling Hay).

Myers, F. E. & Bro., Ashland, Ohio . . .	2
Red Jacket Manufacturing Co., Davenport, Iowa	19
U. S. Wind Engine and Pump Co , Batavia, Ill.	13
Utica Tool Co., Utica, N. Y. . . .	22
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

HAY LOADERS.

Deere & Mansur Co., Moline, Ill.	11
Marseilles Manufacturing Co., Marseilles, Ill. .	10
Rock Island Plow Co., Rock Island, Ill. .	17
Sandwich Manufacturing Co., Sandwich, Ill.	13
Thomas Manufacturing Co., Springfield, Ohio	8

HAY RAKES.

Acme Harvester Co., Pekin, Ill.	45
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Buffalo Pitts Co., Buffalo, N. Y. .	12
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deere & Mansur Co., Moline, Ill.	11
Deering Harvester Co., Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y	51
Keystone Farm Machine Co., Ltd., York, Pa.	3
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Moline Plow Co., Moline, Ill.	39
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Plano Manufacturing Co., Chicago, Ill. .	47
Richardson Manufacturing Co., Worcester, Mass.	10
Thomas Manufacturing Co., Springfield, Ohio	8
Wiard Plow Co., Batavia, N. Y.	11
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y. . .	43

HAY TEDDERS.

Johnston Harvester Co., Batavia, N. Y.	51
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Richardson Manufacturing Co., Worcester, Mass	10
Thomas Manufacturing Co., Springfield, Ohio	8
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43

HODS (Steel and Wood).

Lansing Wheelbarrow Co., Lansing, Mich.	9

IMPLEMENT PARTS (Rake Teeth, Knife Sections, Etc.).

Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Baker & Hamilton, San Francisco, Cal. .	24
Herschell, R , Manufacturing Co., Peoria, Ill.	13
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

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Doughten, H. W., Moorestown, N. J.	52

LAWN MOWERS.

Clipper Lawn Mower Co., Norristown, Pa. .	24
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Whitman & Barnes Manufacturing Co., Akron, Ohio	23

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Clizbe Bros, Manufacturing Co., Plymouth, Ind	23
Silver Manufacturing Co , Salem, Ohio . .	5
Western Implement Co., Port Washington, Wis	23
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

MOWERS.

Acme Harvester Co., Pekin, Ill. . . .	45
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Deering Harvester Co. Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y.	36, 37
Plano Manufacturing Co., Chicago, Ill.	47
Richardson Manufacturing Co., Worcester, Mass . . .	10
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43

OIL ENGINES.

Best Mfg. Co., San Leandro, Cal.	48

PLOWS (Walking, Riding and Disc).

Avery Manufacturing Co., Peoria, Ill. . . .	5
Baker & Hamilton, San Francisco, Cal. .	21
Bradley, David, Manufacturing Co., Bradley, Ill. .	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Case, J. I., Plow Works, Racine, Wis. .	cover
Collins Plow Co., Quincy, Ill.	16
Deere & Co., Moline, Ill.	14
Hench, Dromgold & Co., New York, N. Y.	16
Moline Plow Co , Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa .	13
Ohio Cultivator Co., Bellevue, Ohio	4
Oliver Chilled Plow Works, South Bend, Ind	26
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill . . .	17
South Bend Chilled Plow Co., South Bend, Ind . . .	20
Standard Harrow Co., Utica, N. Y.	7
Wiard Plow Co., Batavia, N. Y.	11
Whitman & Barnes Manufacturing Co., Akron, Ohio . .	23

POTATO MACHINERY.

Aspinwall Manufacturing Co., Jackson, Mich	50
Bateman Manufacturing Co., Grenloch, N. J.	35
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deere & Mansur Co., Moline, Ill.	14
Doughten, H. W., Moorestown, N. J.	52
Moline Plow Co., Moline, Ill. . . .	39
Parlin & Orendorff Co , Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
Standard Harrow Co., Utica, N. Y.	7

PUMPS, HAND AND POWER (Lift, Force and Spray).

Barnes Manufacturing Co., The, Mansfield Ohio . .	19
Challenge Wind Mill & Feed Mill Co., Batavia, Ill. .	4
Deming Co., The, Salem, Ohio	cover
Flint & Walling Manufacturing Co., Kendallville, Ind.	18
Goulds Manufacturing Co., The, Seneca Falls, N. Y. .	19
Maud S., W. M. and Pump Co., Lansing, Mich. . .	39
Myers, F. E. & Bro., Ashland, Ohio . .	2
Red Jacket Manufacturing Co., Davenport, Iowa	19
Stover Manufacturing Co., Freeport, Ill. . .	18
Thomas Manufacturing Co., Springfield, Ohio .	8
U. S Wind Engine and Pump Co., Batavia, Ill. .	13
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

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Johnston Harvester Co., Batavia, N. Y. . .	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
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Plano Manufacturing Co., Chicago, Ill.	47
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ROADMAKING MACHINERY.

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	9
Sidney Steel Scraper Co., Sidney, Ohio	9

ROCK AND ORE CRUSHING MACHINERY.

Martin Brick Mch. Mfg. Co., The, Lancaster, Pa.	22

ROLLERS (Field or Road).

Adriance, Platt & Co., Poughkeepsie, N. Y. . .	55
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buch's Sons, A., Elizabethtown, Pa.	8
Hench, Dromgold & Co., New York, N. Y. .	16
Johnson & Field Manufacturing Co., Racine, Wis	24
Keystone Farm Machine Co., Ltd., York, Pa. .	3
Lansing Wheelbarrow Co., Lansing, Mich . .	9
Lean Manufacturing Co., Roderick, Mansfield, Ohio	21
Martin Brick Mch. Mfg. Co., The, Lancaster, Pa.	22
Ohio Cultivator Co., Bellevue, Ohio	4
Standard Harrow Co., Utica, N. Y. .	7

ROPE.

Union Selling Co., New York, N. Y. . . .	cover

SEEDERS, BROADCAST (Grain and Grass).

American Harrow Co., Detroit, Mich. . . .	26
Baker & Hamilton, San Francisco, Cal.	21
Crown Manufacturing Co., Phelps, N. Y. .	cover
Deere & Mansur Co., Moline, Ill. . .	14
Goodell Co , Antrim, N. H. . . .	12
Hench, Dromgold & Co., New York N. Y. .	16
Hoosier Drill Co , Richmond, Ind. . . .	11
McSherry Manufacturing Co., Middleton, Ohio	13
Mast & Co., P. P., Springfield, Ohio	12
Superior Drill Co., Springfield, Ohio . . .	2
Whitman Agricultural Co., St. Louis, Mo. . .	6

SHARPENERS AND GRINDERS.

Aultman, Miller & Co., Akron, Ohio	53
Clizbe Bros. Manufacturing Co., Chicago, Ill. .	23
Deering Harvester Co., Chicago, Ill. . .	49
Hench, Dromgold & Co., New York, N. Y.	16
Luther Brothers, Milwaukee, Wis. .	21
Plano Manufacturing Co., Chicago, Ill. . .	47
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STEAM BINDING AND HARVESTING MACHINERY.

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STEAM PLOWS.

Best Mfg. Co., San Leandro, Cal.	48

STEEL.

American Steel and Wire Co., New York, N. Y.	25

STRETCHERS (Fence).

Keystone Woven Wire Fence Co., Peoria, Ill. . .	21

SUGAR CULTIVATING IMPLEMENTS.

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THRESHING MACHINERY.

Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal	21
Best Mfg. Co., San Leandro, Cal.	48
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Ellis Keystone Agricultural Works, Pottstown, Pa. .	3
Grant-Ferris Co., Troy, N. Y.	24

TRACTION ENGINES (Freighting Outfits).

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TRANSPLANTERS.

McSherry Manufacturing Co., Middleton, Ohio .	13

TREAD POWERS (Horse, Dog, Sheep, Etc.).

Challenge Wind Mill and Feed Mill Co., Batavia, Ill . .	4
Ellis Keystone Agricultural Works, Pottstown, Pa. .	3
Ross, E. W. Co., The, Springfield, Ohio	6
Sandwich Manufacturing Co., Sandwich, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

TRUCKS (Hand Warehouse).

American Harrow Co., Detroit, Mich.	26
Buch's Sons, A., Elizabethtown, Pa.	8
Hench, Dromgold & Co., New York, N. Y.	16
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	9
Lansing Wheelbarrow Co., Lansing, Mich.	9
Ohio Cultivator Co., Bellevue, Ohio	4
Sidney Steel Scraper Co., Sidney, Ohio	9
Whitman Agricultural Co., St. Louis, Mo.	6

TWINE (for Self-binding Harvesters).

Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Deering Harvester Co., Chicago, Ill	49
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y. .	36, 37
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Avery Manufacturing Co., Peoria, Ill. .	5
Baker & Hamilton, San Francisco, Cal. .	21
Birdsell Manufacturing Co., South Bend, Ind. . . .	12
Fish Bros. Wagon Co , Racine, Wis.	7
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	9
Lansing Wheelbarrow Co., Lansing, Mich.	9

WEEDERS.

Acme Harvester Co., Pekin, Ill., ...	45
Aspinwall Manufacturing Co., Jackson, Mich.	50
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Standard Harrow Co., Utica, N. Y.	7
Wiard Plow Co., Batavia, N. Y.	11

WELL TOOLS AND DRILLING MACHINERY.

Flint & Walling Mfg. Co., Kendallville, Ind.	18
Star Drilling Machine Co., Akron, Ohio	1

WHEELBARROWS.

Buch's Sons, A., Elizabethtown, Pa.	8
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio .	9
Lansing Wheelbarrow Co., Lansing, Mich.	9
Martin Brick Mch. Mfg. Co., The, Lancaster, Pa. . . .	22
Sidney Steel Scraper Co., Sidney, Ohio . . .	9
Whitman Agricultural Co., St. Louis, Mo.	6

WIND MILLS (Towers and Tanks).

Challenge Wind Mill & Feed Mill Co., Batavia, Ill. . . .	4
Flint & Walling Mfg. Co., Kendallville, Ind.	18
Marseilles Manufacturing Co., Marseilles, Ill.	10
Maud S., W. M. and Pump Co., Lansing Mich. . . .	39
Stover Manufacturing Co., Freeport, Ill.	18
U. S. Wind Engine and Pump Co., Batavia, Ill. . . .	13

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American Steel and Wire Co., New York, N. Y. . .	25

WIRE NAILS.

American Steel and Wire Co., New York, N. Y. . .	25

WOOD SAWING MACHINERY.

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Challenge Wind Mill Co., Batavia., Ill. . .	4
DeLoach Mill Manufacturing Co., Atlanta, Ga.	6
Ellis Keystone Agricultural Works, Pottstown, Pa.	3
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U. S. Wind Engine and Pump Co., Batavia, Ill. .	13

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LONDON'S IMPLEMENT SHOW.

Full Report of the Smithfield Show—Description of American Exhibits.

LONDON, December 15, 1900.

The principal event in British agricultural circles at this time of the year is the annual show of the Smithfield Club, held in London for a week in December.

Southwell & Co., of London, exhibited American implements at their two stands. At one of them was an Ohio hay loader, a Keystone weeder and an Ideal cultivator. The second stand, situated in another part of the building, included samples of the well-known Deering implements (for which Messrs. Southwell & Co. are wholesale agents), also binders, reapers, mowers, plows, harrows, hay rakes, hay loaders and tedders and combined cultivators.

Other implements and machinery made in the United States were exhibited as follows:

A newcomer at this show was Deere & Co., of Moline, Ill., who displayed a line of their plows.

Aultman, Miller & Co. were present for the second time, represented by their export manager, Mr. F. Porter Thayer, located at Waterloo Place, London. They had a binder and mowing machine on view.

Further along was the stand of the Johnston Harvester Co., who have a place in Paris as well as in Batavia, N. Y. They showed their well-known harvesters and binders.

The McCormick Harvesting Machine Co., U. S. A., had a nice collection of harvesters and binders, mowers, cultivators, horse rakes, horse hoes, grinders, sowers, etc.

D. M. Osborne & Co., U. S. A., were found in their usual place with an assortment of their specialties,—viz, binder, mower, harrow, horse hoe, cultivator, hay rake and hay tender. The London office of the Osborne Co. is mudre the charge of Mr. Kosters, a well-known figure at all implement exhibits.

Proceeding round the crowded galleries the visitors found the exhibit of the Plano Manufacturing Co., U. S. A., presided over by the capable manager, Mr. W. B. Birge, with an excellent show of binders, mowers, horse rakes, reapers, grinders and drills. The Plano Co. have a capital warehouse in Southwark street, London, well worth a visit. Within a stone's throw there are also the premises of Southwell & Co., and the McCormick Co. These three houses are so situated that they can be easily inspected by interested persons.

A stall well worth looking at was owned by Mr. T. G. Slipper, of Brundall, Norwich. This exhibit consisted of spring and spike-tooth lever harrows, "Superior" grain drills and disc harrows on wheels, "Champion" draw-cut mower, "New Aspinwall" potato planter and potato sorter, new double-action churn, broad-cast hand seed sowers, spring-tooth cultivator for hop gardens and orchards, etc. Mr. Slipper has exhibited at this show for the last six or seven years, and his connection with American implements as an importer goes back for many years.

Any one accustomed to visit this show can always find the stand of the Walter A. Wood M. and R. Machine Co., U. S. A., as they have occupied the same position ever since the building was opened, they having introduced their machine here in 1858. The exhibit included their new hay tedder, a sickle grinder, left-hand binder, two-horse new steel mower, tubular tilt-bar mower, iron-frame mower, one-horse new steel mower and all-steel hay rake. Needless to add the stand was well worth a visit, and the manager, Mr. C. E. Blake, assured me that there was every indication of a good year's business.

The remaining exhibitors were the Union Selling Co., London and New York city, with a display of binder twine, cordage, ropes, etc.

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Buffalo Pitts Co., Buffalo, N. Y. 12

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Challenge Wind Mill and Feed Mill Co., Batavia, Ill. 4
Clipper Lawn Mower Co., The, Norristown, Pa. . 24
Clizbe Bros. Mfg. Co., Chicago, Ill. . . . 23
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Star Drilling Machine Co., Akron, Ohio 4
Stover Mfg. Co., Freeport, Ill. 18
Superior Drill Co., The, Springfield, Ohio 2

Thomas Mfg. Co., The, Springfield, Ohio 8

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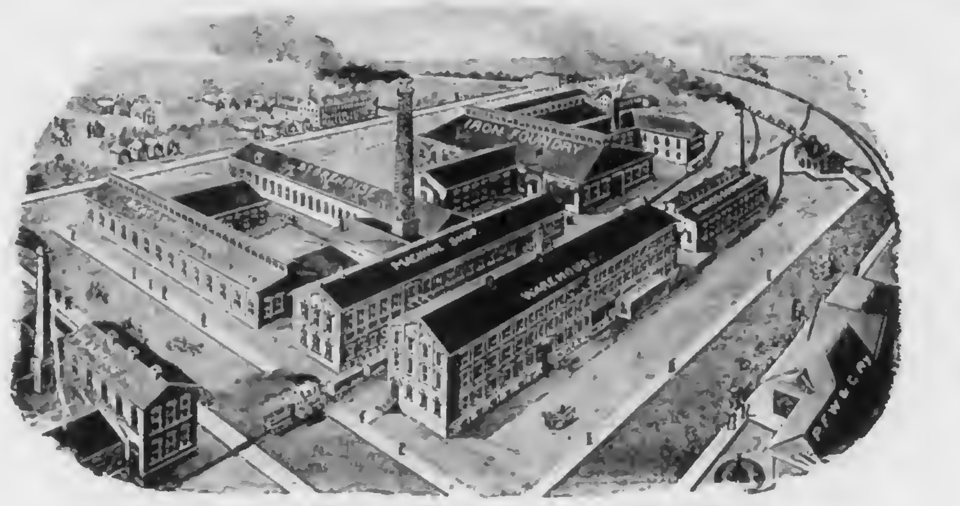
Hydraulic Pressure Pumps
Boiler Feeding Pumps.



VIEW OF THE LARGEST [illegible] PUMP FACTORY IN THE WORLD

Pumps for all Purposes.

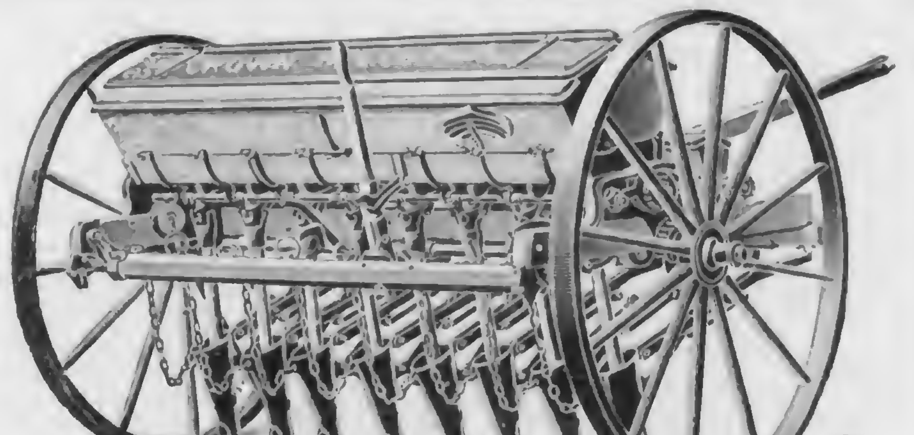
Triplex Power Pumps for Every Duty.
Rotary and Double-Acting Pumps.
Power Pumps for all Purposes.
Horse-Power Pumps for Various Duties.
Railroad and Factory Pumps.
Spraying Pumps and Nozzles.
Garden and Hand Fire Engines.
Irrigating Pumps and Cylinders.
Mine Pumping Machinery.
Fire Extinguishing Pumps.

Importers are supplied with our catalogues and prices in three distinct lines, as follows:
General Catalogue.—Embracing Hand, Windmill and Power Pumps, Hydraulic Rams, Well Supplies, etc.
Special Power Pump Catalogue.—Containing Triplex and other Power Pumps for Water Works, Mines, Factories, etc., operated by Gas and Gasoline Engines, Steam Engine, Electric Motor, etc.
Special Spray Pump Catalogue.—Showing Bucket, Knapsack and Barrel Sprayers, Deming Vermorel and Bordeaux Nozzles, Attachments, etc.
A New Complete Catalogue, embracing all goods manufactured by us, will be issued in the Spring of 1901.
DEMING PUMPS are known as "**The World's Best.**" They received highest award at World's Fair, Chicago, 1893, and at the National Export Exposition, Philadelphia, 1899.

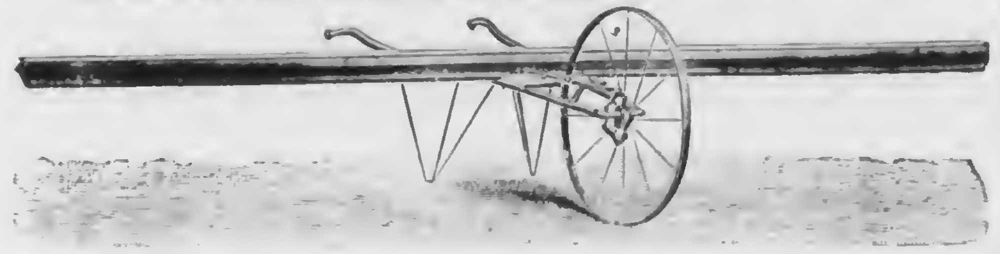
THE DEMING COMPANY,

Manufacturers of Pumps and Hydraulic Machinery,
SALEM, OHIO, U. S. A.
NEW YORK OFFICE, 56 and 58 Pine St. Orders may be placed through our New York house, who can furnish catalogues and prices on application.

CROWN DRILL Absolute, Positive Force Feed, for Grain, Grass Seed and Fertilizer. Grain Feed Wheels are bell-shaped, giving the utmost capacity. Will sow Kidney Beans, Dent Corn, Southern Corn and Oats, or Beet Seed without cracking or breaking; no Extra Attachments required to plant Corn. It has [illegible] of Gauges, actuated by a Lever; when moved to graduations on a dial indicated by a pointer, tells Pounds, Bushels, or Fractions thereof, accurately. No Gears to alter, no Loose Wheels to change, no Pinions to use. Is geared direct to axle—imparts motion instantly. Takes its power from both wheels by Ratchets in Hubs, thus avoiding side draft. Sows right or left, or in circles without loss of motion. Can distribute damp or sticky Fertilizers evenly. Will sow Plaster or Ashes, when others fail. Has Shut-Offs, to Grain and Phosphates, for [illegible] in rows. Has a separate Grass Seeder Box by which seed can be sown either before or behind the hoe by a simple change. Has a perfect, self-acting Spring Hoe with double reversible Steel Point; no stopping for rocks, stumps, roots or stones; with this Spring Hoe the teeth can be pitched to sow deep or shallow without moving a bolt.



CROWN SEEDER For sowing all kinds of Grass Seeds. Will sow from 30 to 40 acres per day. Iron or Wooden Frame. 14 or 16 Foot Box. Light; Strong; Durable. Wire Agitator not affected by the weather like a cord. All Iron Wheel, 30 inches in diameter, with broad rim made like bicycle wheel.



SEND FOR CIRCULARS AND TERMS TO

CROWN MANUFACTURING CO.,
Phelps, N. Y., U. S. A.

NEW CASE GANG

A Plow that takes with the Foreign Trade.

Quality,
The Finest
Made.

We also make a complete line of
Walking Plows Steel or Chill. **Cultivators** 5-Tooth and other styles.
Harrows Disc, Lever and Spike-Tooth.
Catalogue and full information free on application. Address,

J. I. CASE PLOW WORKS
RACINE, WIS., U. S. A.

Universally used by thousands of America's Leading Dairymen.

THE SHARPLES TUBULAR CREAM SEPARATORS

Represent the last greatest stride in improved cream separator construction.

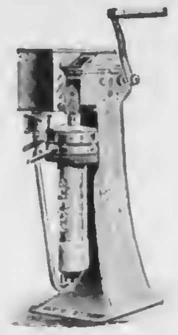
Simple, Durable, Effective. Small Power--Large Capacity.
Absolutely Safe. Handsomely Finished.
"The Bowl Alone Revolves."

A COMPLETE LINE OF DAIRY AND FACTORY SIZES FOR EXPORT.

Cable Address: SHARPRUS, Philadelphia. ABC or Lieber's Code

P. M. SHARPLES,
WEST CHESTER, PENNA., U. S. A.

TUBULAR



HAND SEPARATOR

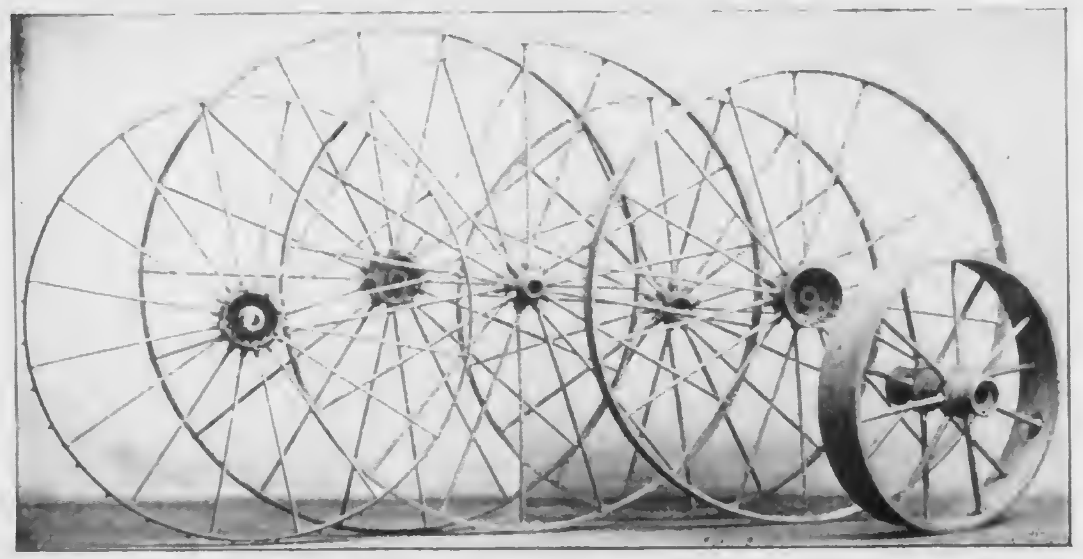
SEPARATING CAPACITIES, PER HOUR, of the Sharples Cream Separators.

DAIRY SIZES.

Buttercup Hand	75 liters
W. H. S. Hand	135 "
No. 1 Safety Hand	145 "
No. 1 Little Giant Steam Driven	145 "
No. 4 Tubular Hand	200 "
No. 6 Tubular Hand	300 "
No. 9 Tubular Hand	400 "
No. 6 Tubular Steam Driven	300 "
No. 9 Tubular Steam Driven	400 "

FACTORY SIZES.

Standard Steam Driven	650 liters
Imperial Steam Driven	975 "
Standard Belt	650 "
Imperial Belt	975 "
No. 25 Tubular Steam Driven	1,120 "
No. 32 Tubular Steam Driven	1,430 "
No. 45 Tubular Steam Driven	2,010 "
No. 60 Tubular Steam Driven	2,690 "



All kinds and sizes of metal wheels built on advance quantity specifications, for manufacturers only.

The Bettendorf Metal Wheel Co.

Factories at Davenport, Iowa, and Springfield, Ohio, U. S. A.

Capacity, over 150 tons finished wheels per day.

Cable Address METALWHEEL.

BINDER TWINE.

CELEBRATED CROWN BRAND.

THE LARGEST MANUFACTURERS---THE BEST TWINE IN THE WORLD.

THE UNION SELLING CO.

LONDON OFFICE: 127 FENCHURCH ST., E. C.
HOME OFFICE: 17 STATE ST., NEW YORK

Mills in U. S. { Allston, Mass. Chelsea, Mass. Boston, Mass. Brooklyn, N. Y. &c., &c., &c.

When ordering through your commission house or direct, please be particular to specify "CROWN" brand.

TEXTE FRANCAIS, PAPIER ROSE.

TEXTO ESPAÑOL. PAPEL AMARILLO.

DEUTSCHER TEXT, BLAUES PAPIER.

EXPORT IMPLEMENT ·AGE·
A MONTHLY MAGAZINE DEVOTED EXCLUSIVELY TO THE EXPORT TRADE IN AGRICULTURAL MACHINERY, PUMPS, WIND MILLS, DAIRY SUPPLIES AND HARDWARE SPECIALTIES.
PHILADELPHIA, PA., U.S.A.

Vol. III. No. 6. MARCH, 1901.

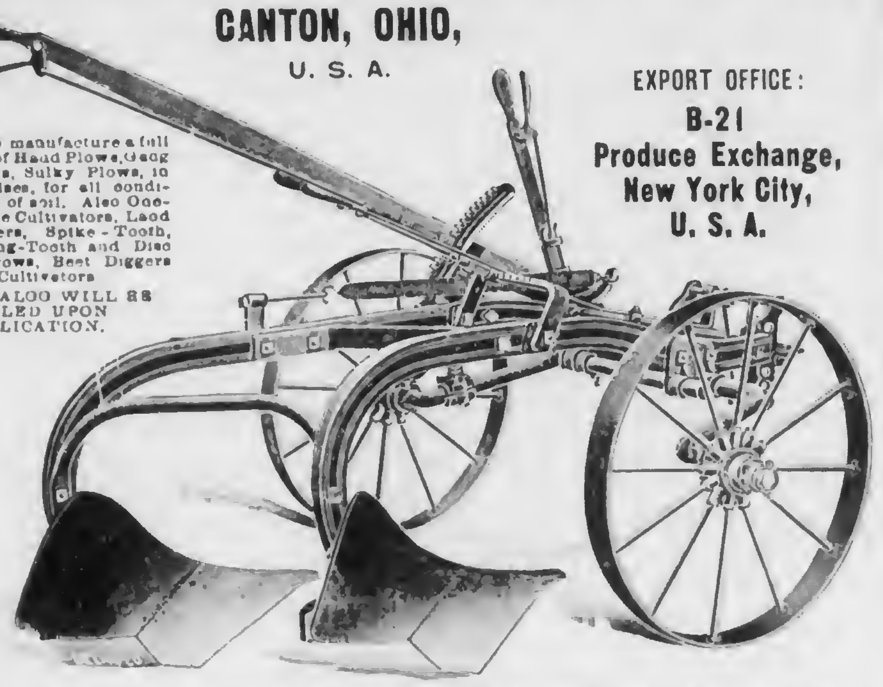
THE BUCHER & GIBBS PLOW CO.

CANTON, OHIO,
U. S. A.

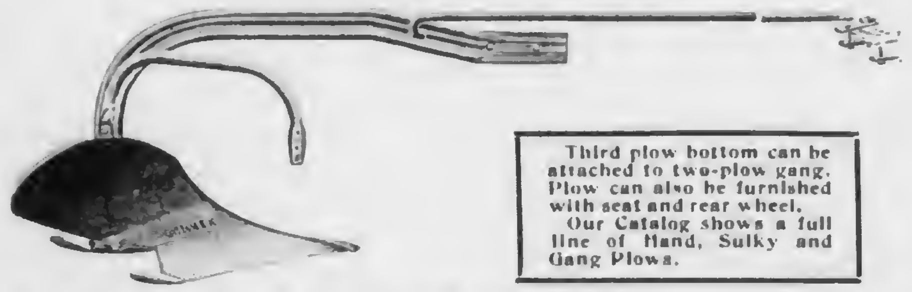
EXPORT OFFICE:
B-21
Produce Exchange,
New York City,
U. S. A.

We manufacture a full line of Hand Plows, Gang Plows, Sulky Plows, in all sizes, for all conditions of soil. Also One-Horse Cultivators, Land Rollers, Spike-Tooth, Spring-Tooth and Disc Harrows, Beet Diggers and Cultivators

CATALOG WILL BE MAILED UPON APPLICATION.

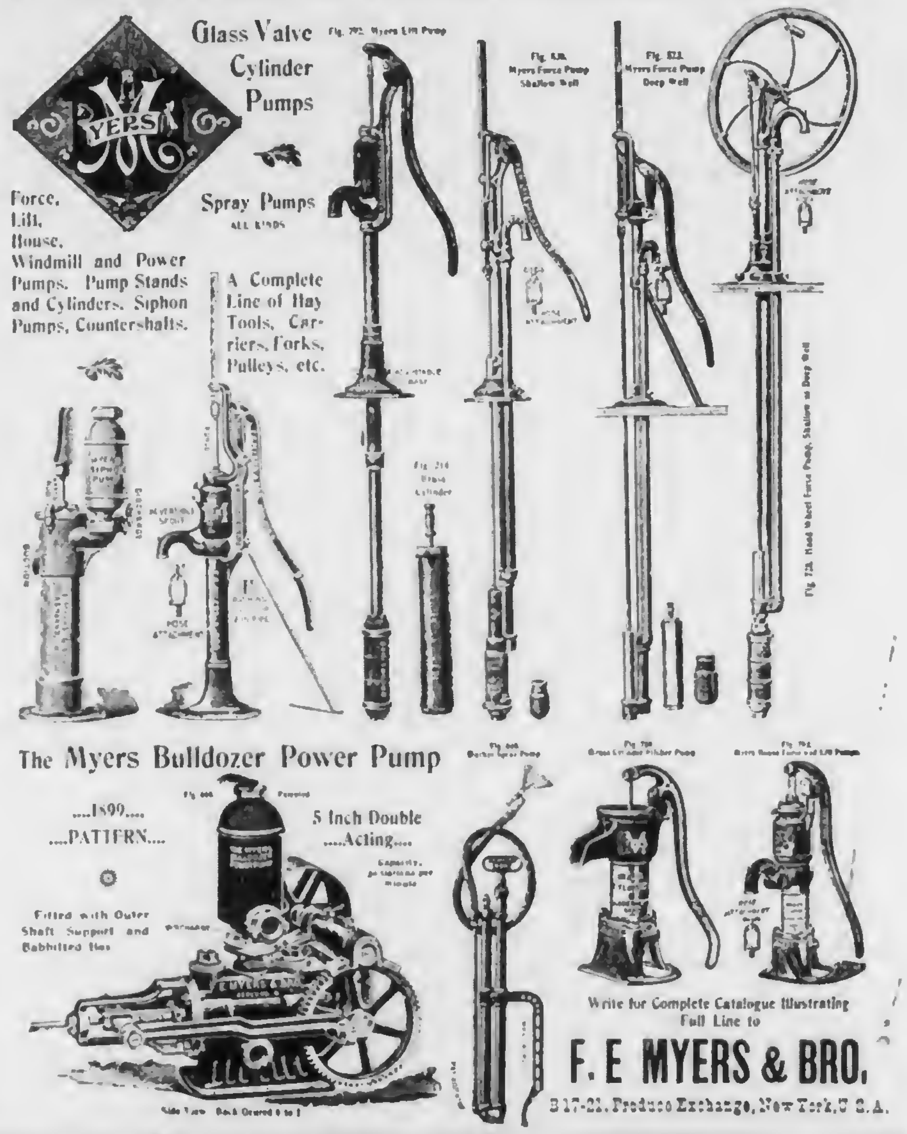


The above cut represents the IMPERIAL CONVEX WALKING GANG, Moldboard View.



Third plow bottom can be attached to two-plow gang. Plow can also be furnished with seat and rear wheel.
Our Catalog shows a full line of Hand, Sulky and Gang Plows.

F. E. MYERS & BRO., Ashland, O., U. S. A.


MYERS
Fig. 792. Myers Lift Pump
Fig. 820. Myers Force Pump Shallow Well
Fig. 822. Myers Force Pump Deep Well
Fig. 723. Hood Wheel Force Pump, Shallow or Deep Well
Fig. 214 Brass Cylinder
HOSE ATTACHMENT
Capacity, 50 Gallons per Minute
Side View. Back Geared 6 to 1

Glass Valve Cylinder Pumps

Spray Pumps
ALL KINDS

Force,
Lift,
House,
Windmill and Power Pumps. Pump Stands and Cylinders. Siphon Pumps, Countershafts.

A Complete Line of Hay Tools, Carriers, Forks, Pulleys, etc.

The Myers Bulldozer Power Pump

....1899....
....PATTERN....

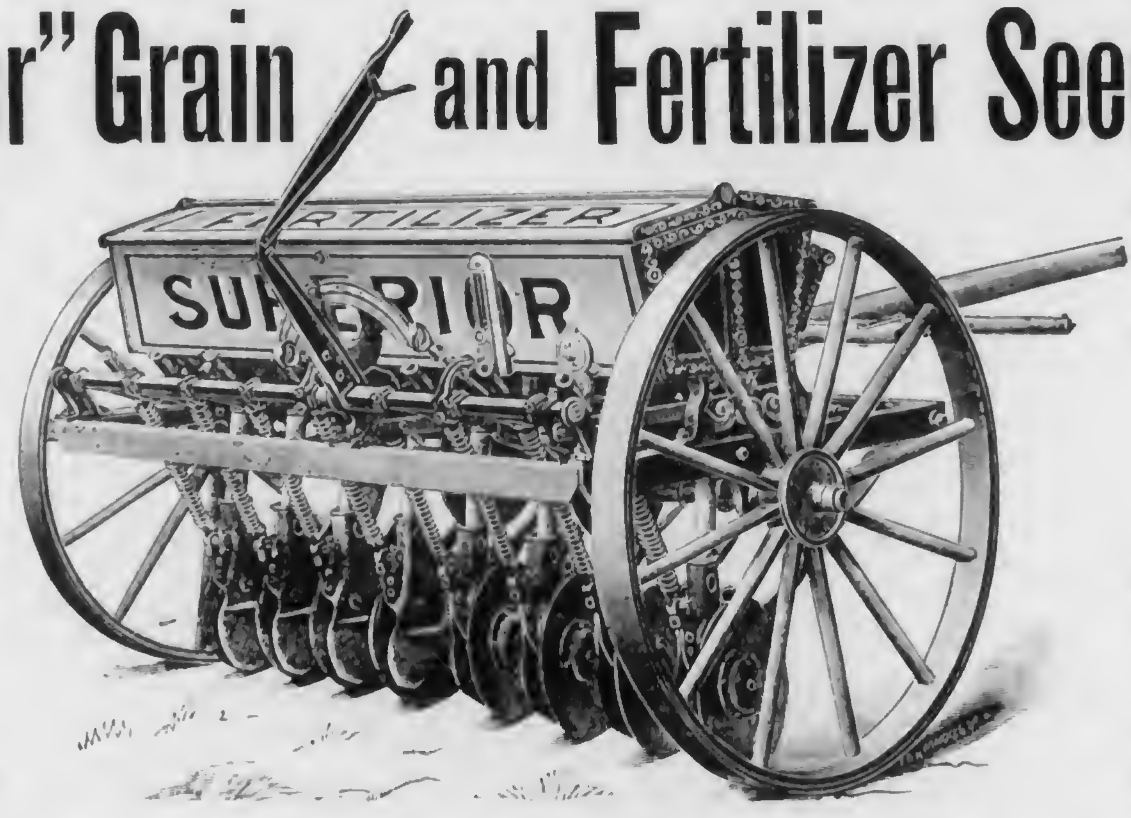
5 Inch Double ....Acting....

Fitted with Outer Shaft Support and Babbitted Box

Write for Complete Catalogue Illustrating Full Line to

F. E MYERS & BRO.
B 17-21, Produce Exchange, New York, U. S. A.

"Superior" Grain and Fertilizer Seed Drills



DRILLS WITH OR WITHOUT FERTILIZER ATTACHMENT

DISC DRILLS
HOE DRILLS
SHOE DRILLS
BEET DRILLS
BROADCAST SOWERS

COMPLETE LINE OF HIGHEST GRADE SEEDING MACHINES

"SUPERIOR" DRILLS ARE USED WITH SUCCESS IN EVERY WHEAT GROWING SECTION OF THE WORLD

CORRESPONDENCE SOLICITED

Nos semoirs à houe et à disque se fabriquent dans toutes les grandeurs.
Unsere Hacken- und Scheiben-Drillmaschinen werden in allen Grössen angefertigt.
Nuestras Sembradoras de azada y de disco se fabrican en todos tamaños.

ILLUSTRATED CATALOGUE ON APPLICATION

THE SUPERIOR DRILL CO., Springfield, Ohio, U. S. A.

ELLIS KEYSTONE AGRICULTURAL WORKS

POTTSTOWN, PA., U. S. A.

Manufacturers and Exporters of
Level Tread
Horse Powers,
ALSO **Threshers and Cleaners.**

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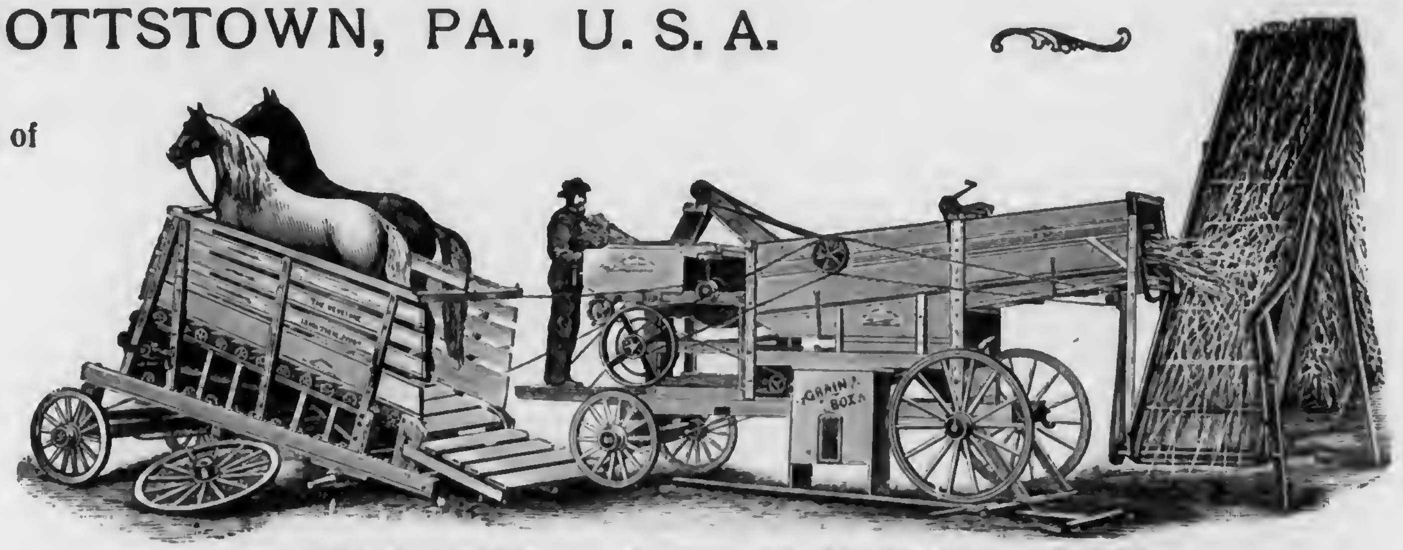
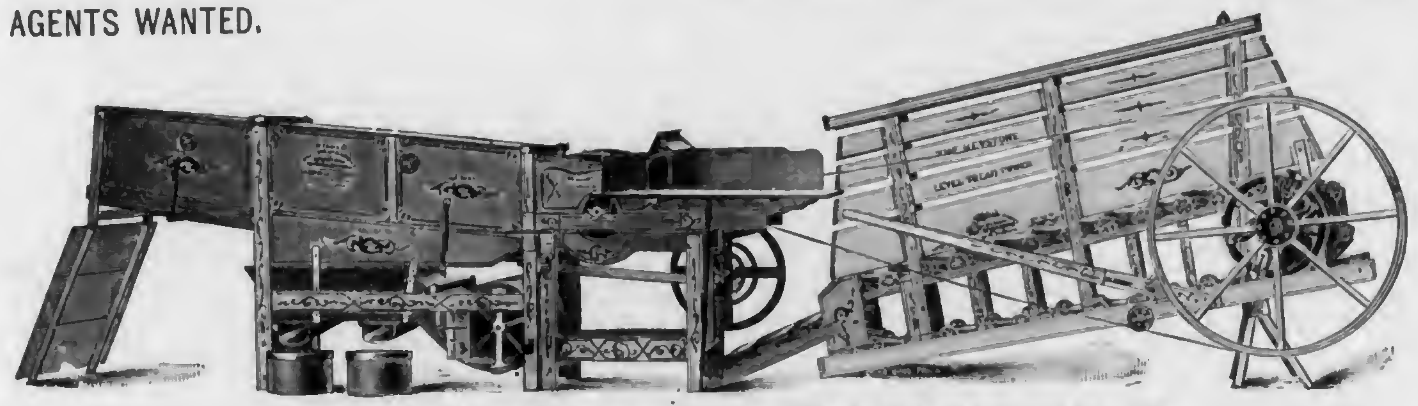
AGENTS WANTED.



TWO HORSE POWER and 28 INCH THRESHER AND CLEANER



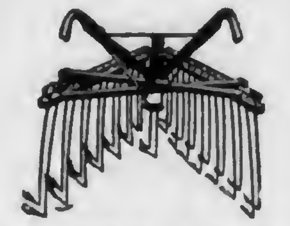
ONE HORSE POWER and 20 INCH THRESHER AND CLEANER

Fodder Cutters A Specialty

The Keystone Weeder and Shallow Cultivator!!

A Great Labor Saver for the Cultivation of Sugar Beets, Trucking, etc.

20,000 of the "KEYSTONE ADJUSTABLE" WEEDERS and SHALLOW CULTIVATORS in the STATES in one Season.



Narrowed to 30 Inches.

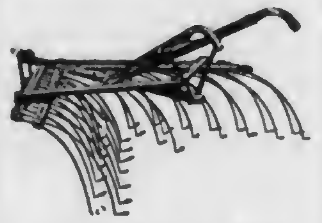
CAMDEN, DEL., U. S. A, January 16th, 1899.

Keystone Farm Machine Company, York, Pa.

DEAR SIRS:—The Keystone Weeder, that I bought of you in the Spring of 1898, saves me much money. I used in on 10 acres of corn, 16 acres of strawberries, 16 acres of red raspberries, and I am sure it saved me in labor alone last season *one hundred dollars.*

Yours truly,
C. W. LORD.

Write to us or to any of our agencies for Booklet containing more than one hundred testimonials from the best dealers. It will advise you of the numerous usages to which this great labor-saving tool is adapted.

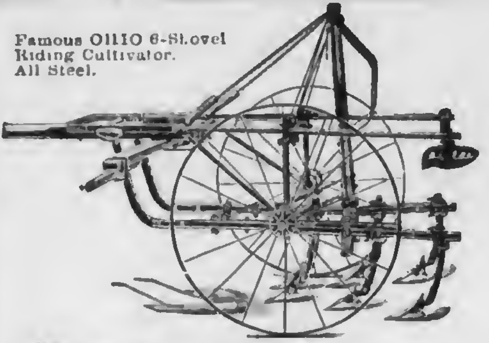


Expanded to 7½ Feet.

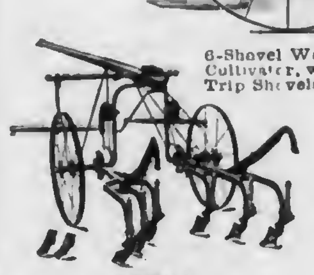
AGENTS: F. C. Southwell & Co., London. James S. Duncan, Paris. G. Duchamp, Brussels. Thos. I. Hunter & Son, Maybold, Scotland.

EXPORT AGENTS: C. K. Turner & Son, 76 Broad St., New York City, N. Y.

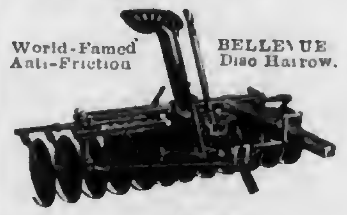
KEYSTONE FARM MACHINE CO., Limited,
YORK, PENNA., U. S. A.



Famous OHIO 6-Shovel Riding Cultivator. All Steel.



6-Shovel Walking Cultivator, with Spring Trip Shovels.



World-Famed Anti-Friction BELLEVUE Disc Harrow.

OHIO Steel Field Roller.

This SEAL

Famous

Goods are Always

They are the Greatest because they are made

MEANS that

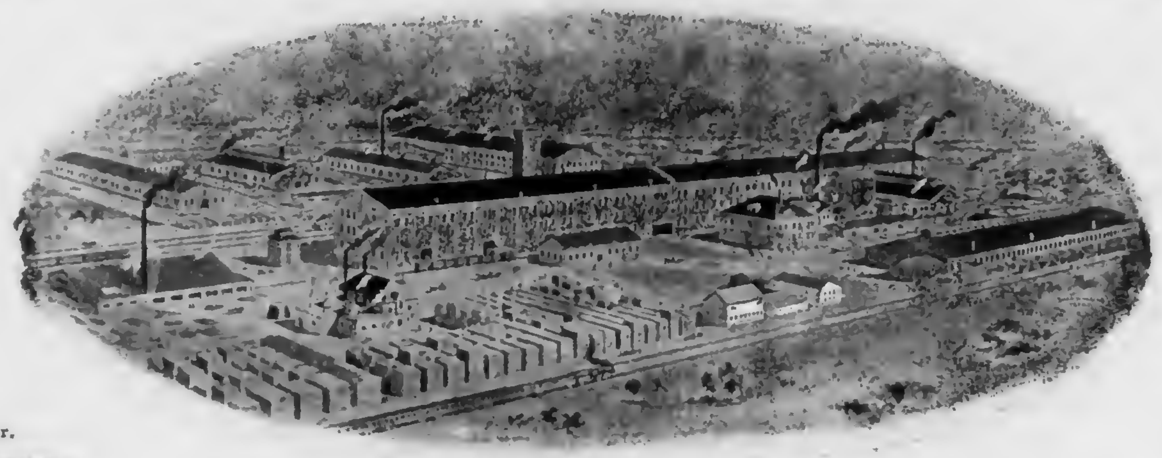
OHIO

Best and Satisfy.

Sellers in all Countries to suit the users.

Reversible and Extension Disc Harrow for Orchards and Vineyards.

"Little Giant" 5-Tooth Cultivator, with Wheel Horse Hoe and Lever.



New Factory Covering 25 Acres of Ground.

"Little Giant" 14-Tooth Harrow, with Lever

"Victor" Steel Beam Double-Shovel Plow.

"Dexter" Hand Garden Cultivator.

Prosperity follows the FAMOUS OHIO.

The OHIO CULTIVATOR CO.

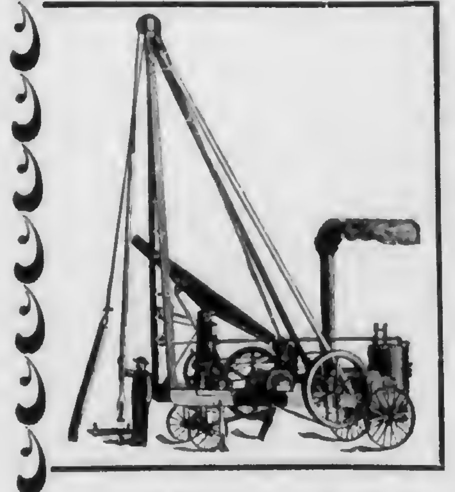
Write for Catalogue and Prices. BELLEVUE, O., U. S. A.

Cable Address: "FAMOUS OHIO."
Western Union Telegraph Code used.

THE HISTORIC SALT BEDS

OF KANSAS

Which have in the past produced and are now producing more and better Salt than any other single section of country, either at home or abroad, were discovered by drilling prospect holes with the famous



STAR DRILLING MACHINES

THE "STARS" are especially well adapted to this use, and are more largely used for prospecting for minerals, oil, gas, sulphur and nitrate salts, or for general drilling, than drills of any other make. They are now in use in every State and Territory in the United States, Mexico, Canada, and in practically every foreign country, from the oil fields of the Caspian to the parched sheep pastures of Australia. For drilling wells for water supply for any purpose they are positively unsurpassed. Drill any depth, from 250 to 2,500 feet. Easy to handle and use, being simple in construction. They are strong and durable and highly efficient. Material and workmanship the very best afforded by ample means and abundant experience. **We manufacture also full line of drilling and fishing tools.**

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USE A-B-C CODE, 4th EDITION,
OR "UNIVERSAL CODE OF LIEBER."

STAR DRILLING MACHINE CO.,
AKRON, OHIO, U. S. A.

(3)

Dandy Windmill

Is the best to buy and sell, because

It is the Strongest Built,
It is the Most Durable,
It is Perfectly Governed,
It is Perfectly Regulating,
Graphite Bearings Need No Oil,
It Has Stood the Test,
It Satisfies All.

A record of ten years has demonstrated the above points to our complete satisfaction. Let us send you cuts and printed matter, showing fully the construction of the Mill and its merits. Ten years' service has corrected all faults and perfected it as no other mill on the market has been. We make all sizes, from 6-foot to 18-foot Mills, both for pumping water and running machinery.

We also make all sizes of Steel Towers for Mills, Tanks, Bells, Etc.

We are also large manufacturers of Tanks, both Steel and Wood, and can give you any size or shape. Our line of Grinders, Shellers and Feed Cutters is large and complete; also Pump Goods, Horse Powers, Etc.

GASOLINE ENGINES.

It's another of our products, and we are making a good one. We furnish them for pumping water, running machinery of all kinds on the farm, running printing presses, well machines; in fact, for any use where a good, reliable, cheap power is required.

It takes the medal wherever exhibited.

Never an exception to this.

Guaranteed to have all the power we claim for it.

Challenge Wind Mill and Feed Mill Co.
BATAVIA, ILL., U. S. A.

Branch Houses and Agencies:
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108 Nicholas St., OMAHA, NEB.
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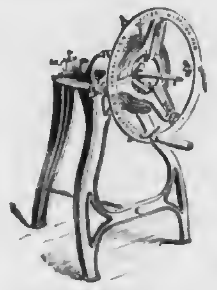
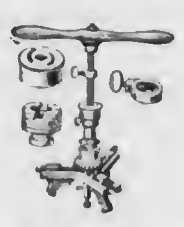
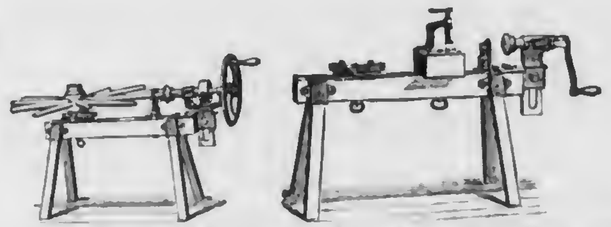
1310 W. Eleventh St., KANSAS CITY, MO.
DALLAS, TEXAS.



Silver's New Taper Hub Boring Machine. Hand power.



Silver's Hub Boxing Machine for light or heavy work.



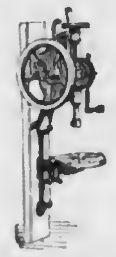
Dole & Deming's Spoke Tenon Machines, hand or power. These machines cut tenons 7-16 to 2 inches diameter and up to 6 inches long.

Silver's No. 1½ Drill, single geared, hand feed.

Silver's No. 1 Hand Drill. Two speeds. Self feed.

Silver's No. 2 Hand Drill. Two speeds. Self feed

No. 12 Advance Drill. Three sizes. Light power or hand. Self feed.



No. 12 Advance Hand Drill. Three sizes. Two speeds Self feed.

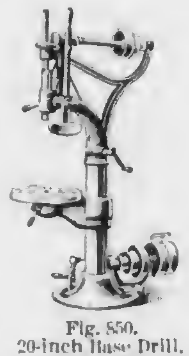
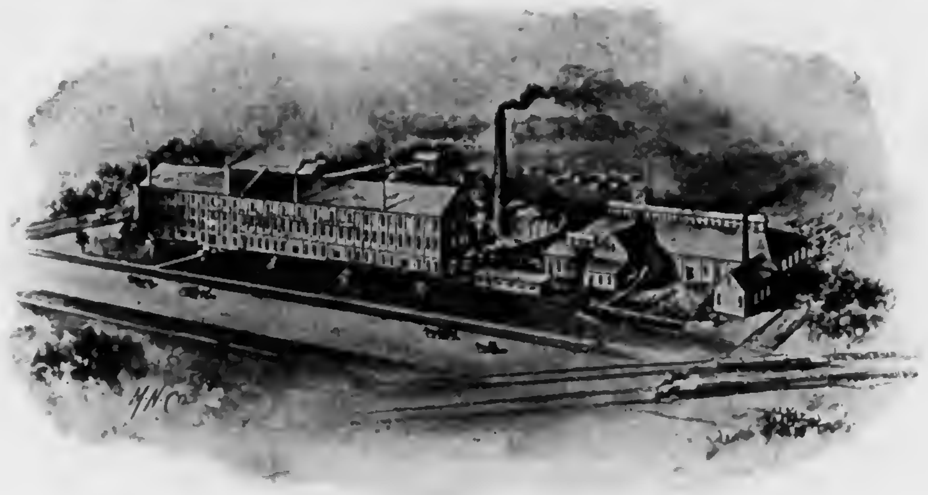


Fig. 850.
20-inch Base Drill.
Lever or screw feed.
Round or square base.

Catalogues in English and Spanish.



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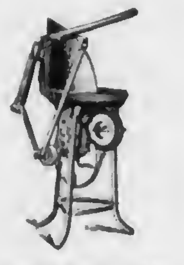
Inquiries and Introductory Orders Solicited.



Portable Hand Forge
Four sizes for light, heavy and medium work.

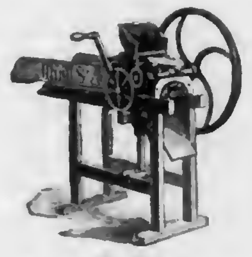


Fig 779.
Nos. 8½ and 10½, "Ohio" Hand Feed Cutter.

THE SILVER MANUFACTURING CO., Salem, Ohio, U.S.A.

New York address: 56 and 58 Pine St. Cable address: "Silver," Salem. Codes: A.B.C. 4TH LIEBERS W.U., AND MANUFACTURERS

Manufacturers of

"OHIO" Feed and Ensilage Cutters, every size from the smallest hand to the largest power machines; Drilling Machines, hand and light power; Portable Forges; Carriage Makers' Tools; Butchers' Tools, etc.

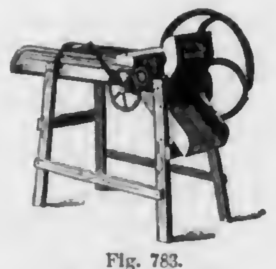
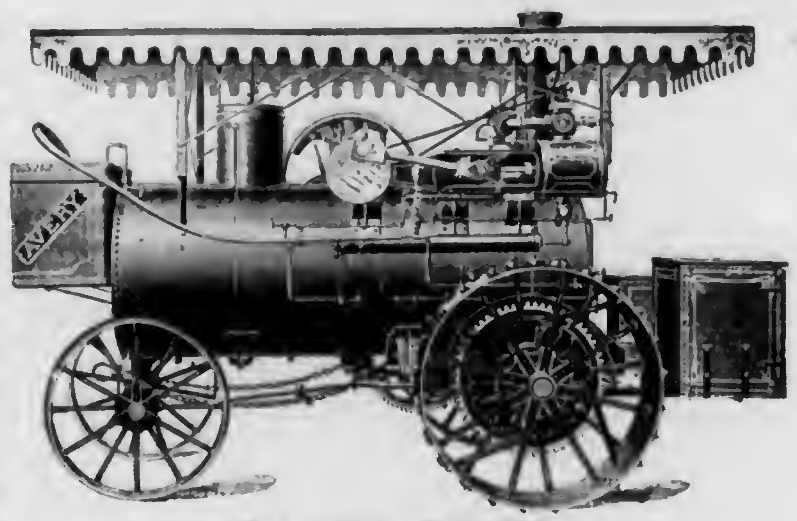


Fig. 783.
No. 11¼, "Pony" Hand Feed Cutter.

TRADE-MARK.

AVERY MFG. CO.

Highest Grade Farm and Threshing Machinery

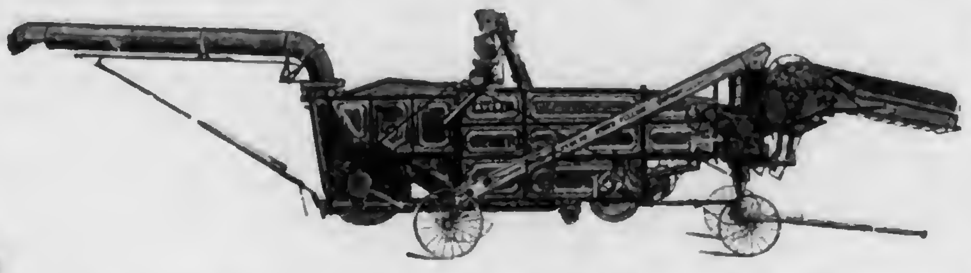


TRACTION ENGINE.

Sizes from 12 to 30 Horse Power, American Rating.
Common Sizes used in America 16 and 22 Horse Power.

The **AVERY** has the marine type of **RETURN FLUE, FULL WATER FRONT BOILER** and has a wonderful record for **ECONOMY** of fuel, being well built and having **GREAT POWER.**

We Issue a Large Handsome CATALOG which is FREE. Write us.



Sizes from 28-in. Cylinder and 42-in. Separator to 42-in. Cylinder and 70-in. Separator.

Furnished in a plain separator or with all attachments, such as **Feeders, Grain Elevators** and **Loaders**, Straw Stackers, Etc.

Our Machines stand at the very head for **perfect cleaning, fast work** and **few repairs.**

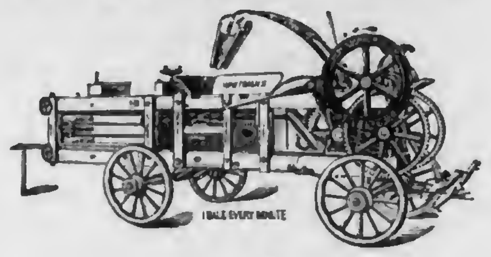
These Machines are well suited to the Export Trade as they always do splendid work and are easy to operate.

AVERY MFG. CO. 389 Iowa Street,
PEORIA, ILL.

WHITMAN AGRICULTURAL CO., ST. LOUIS, MO., U.S.A.

MANUFACTURERS.

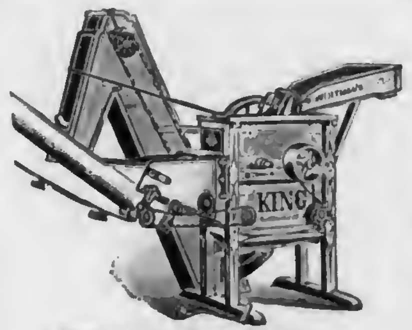
The Most Complete Line of Baling Presses . . . . Made in America. . . . .
VICTORIOUS AND IN USE THROUGHOUT THE WORLD.

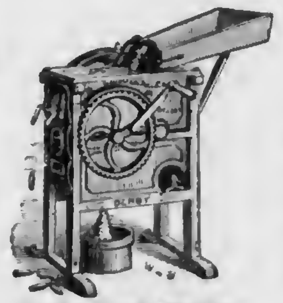


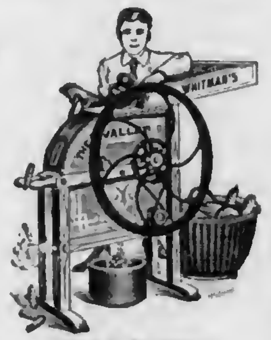
WHITMAN'S HAND BALER WITH TWO SPEEDS & POWER

A LARGE LINE OF HIGH-GRADE

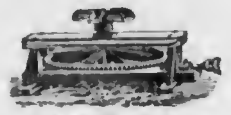
Agricultural Machinery.

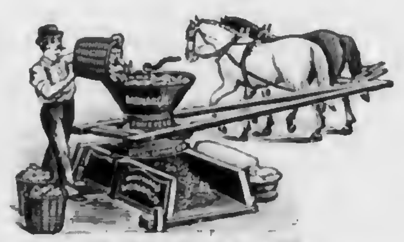

Two-hole Corn Sheller.


Derby Corn Sheller.


Hand Sheller.

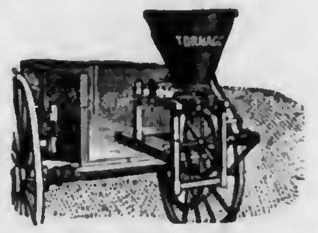
Railway Power.


Lever Power.


Corn and Cob Mill.

Cider and Wine Mill.

Magic Mill.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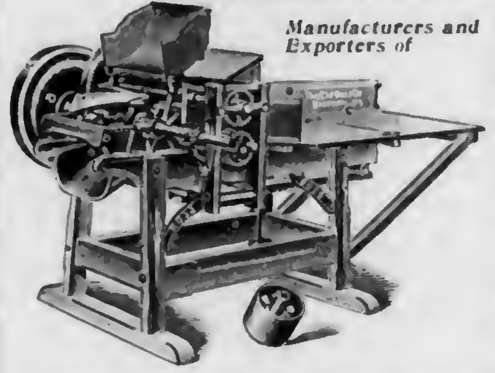

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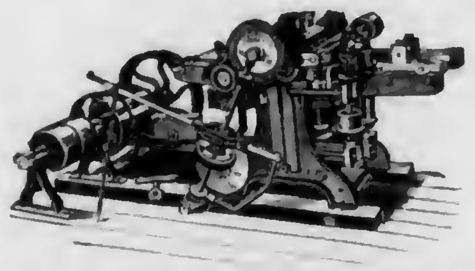

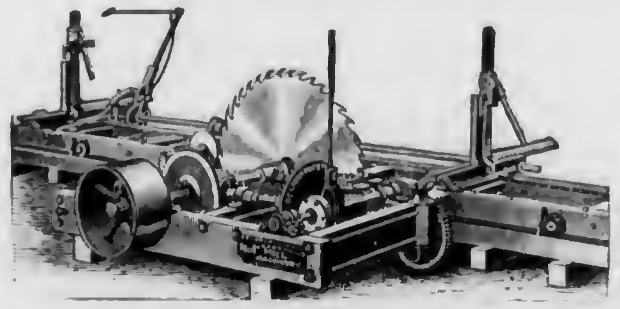

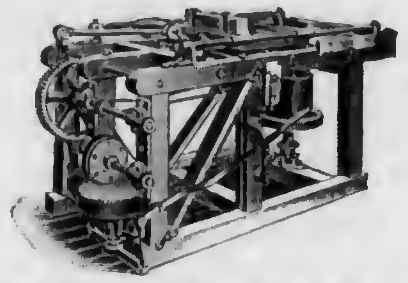

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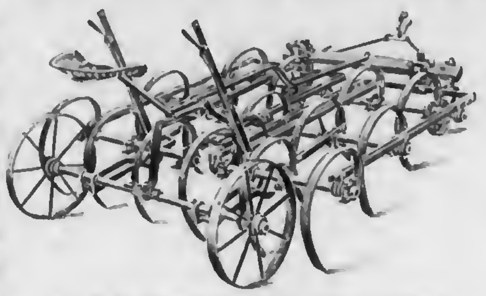
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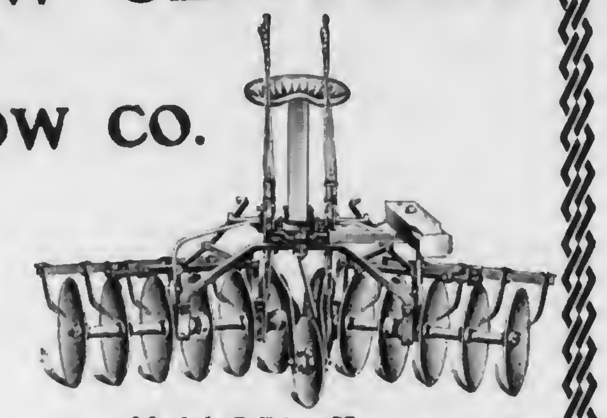
Model C Disc Harrow.

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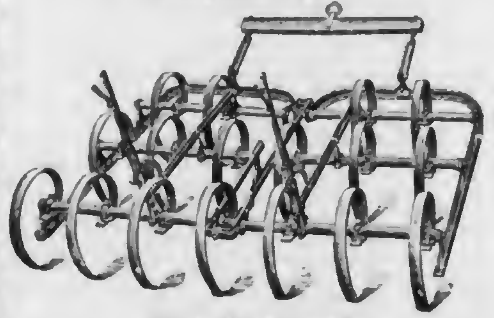
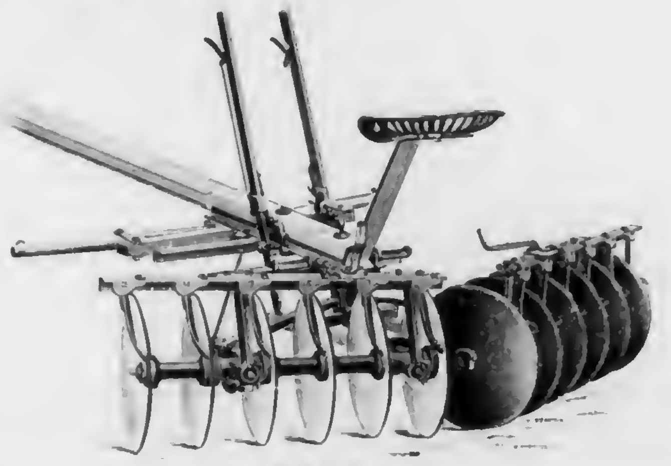

The Aberdeen.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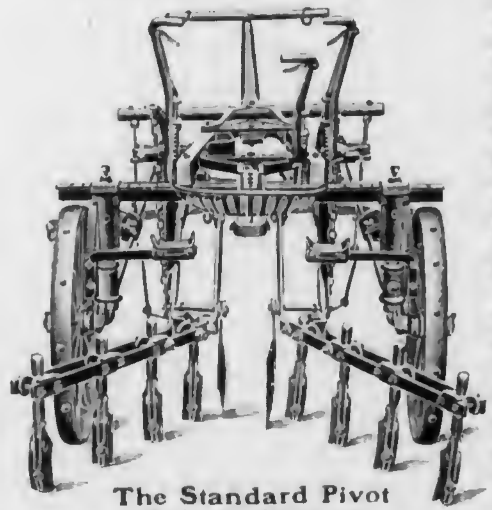
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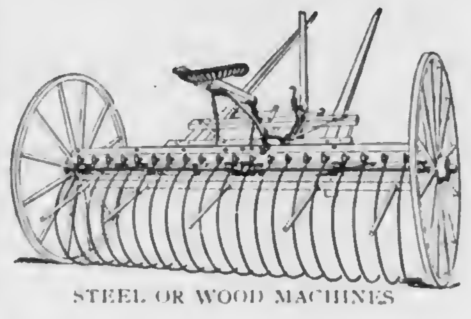
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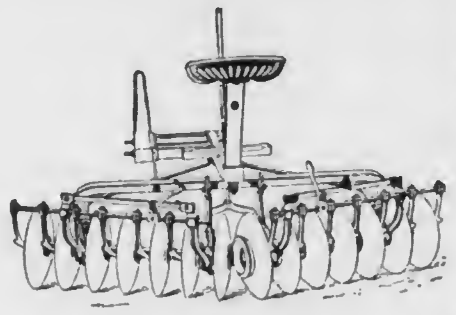

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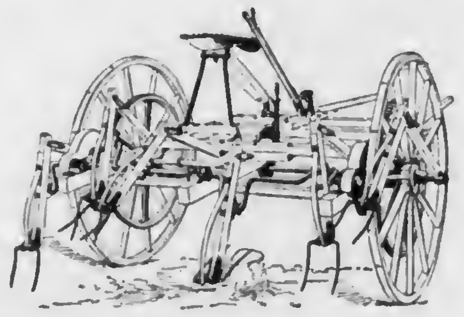

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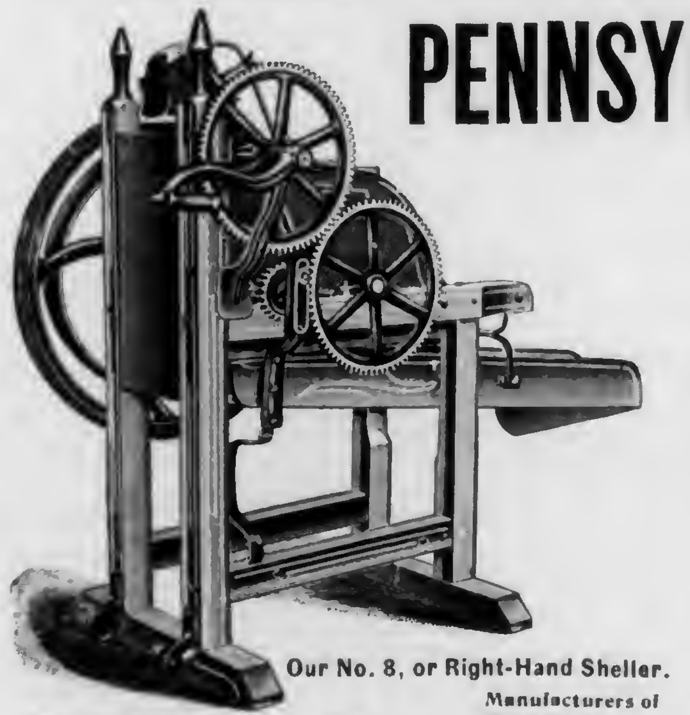
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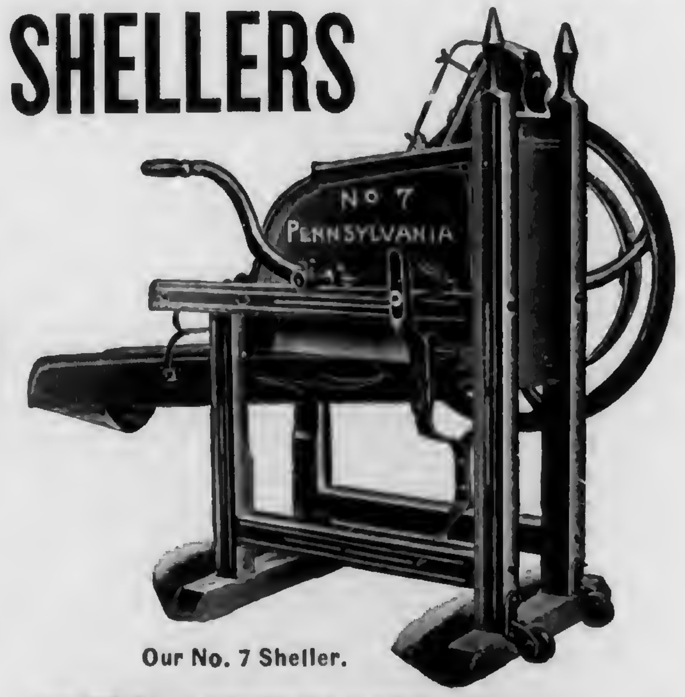

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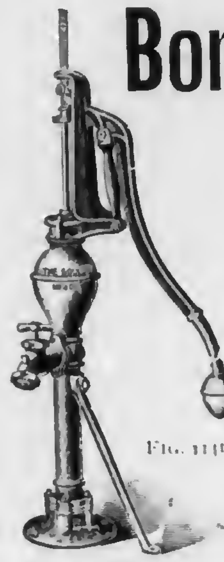
Fig. 1141.

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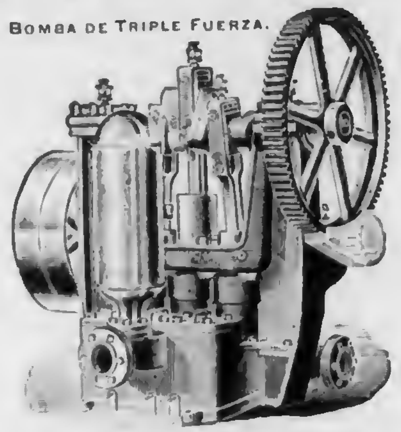
Fig. 924.

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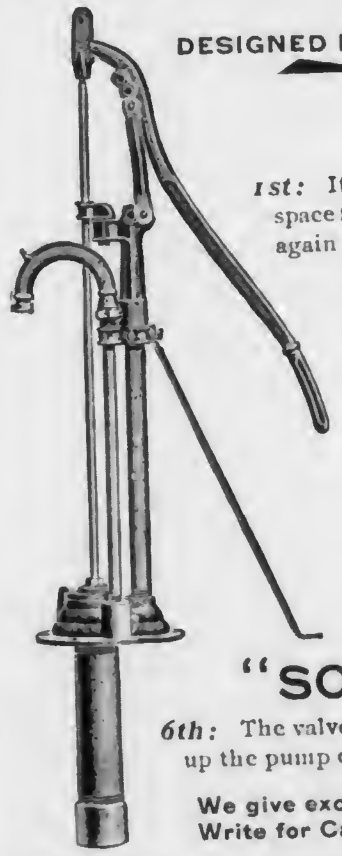

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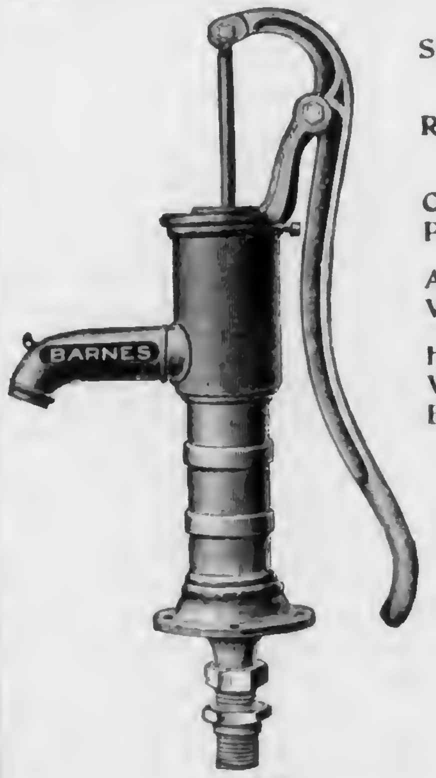

Fig. 107

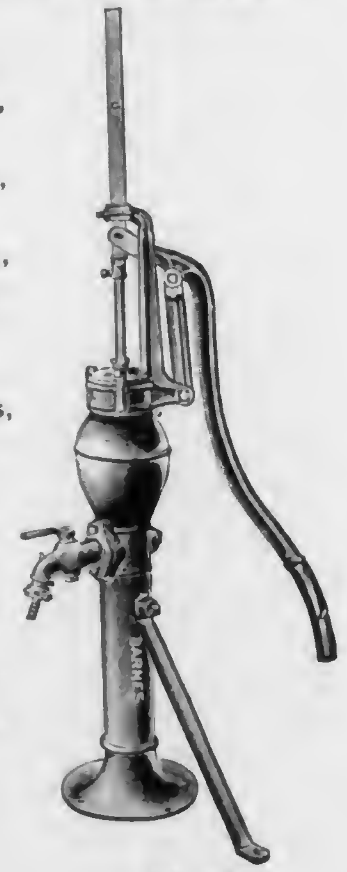

Fig. 551

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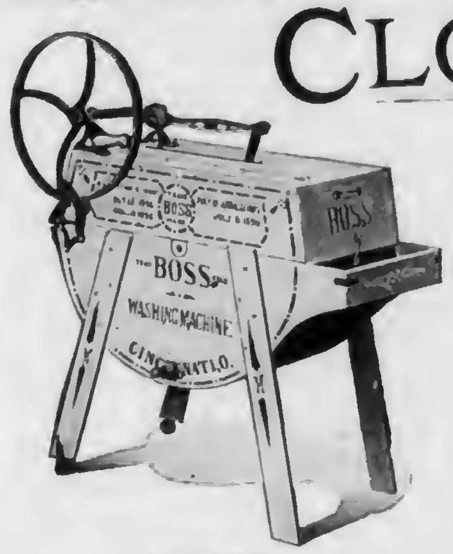

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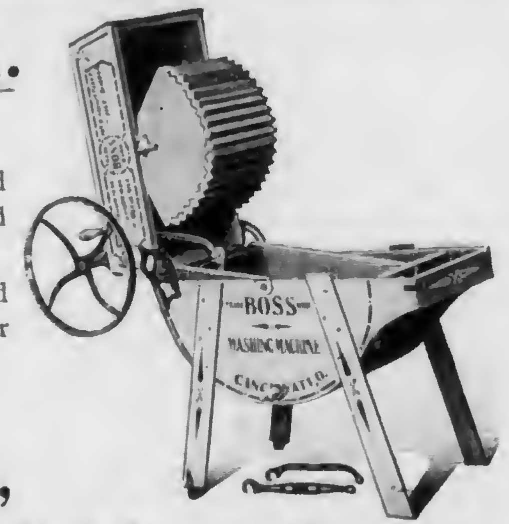

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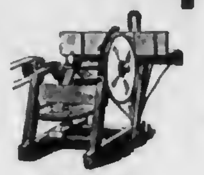
Wood saws.

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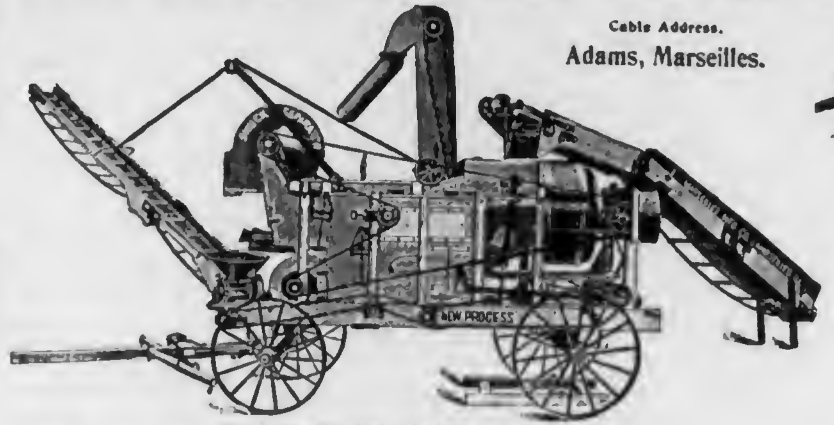
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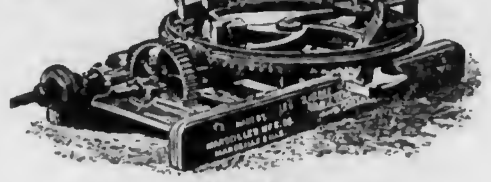
Horse-Powers.

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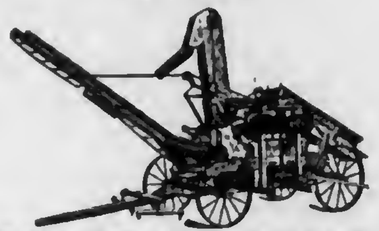
Feed Cutters.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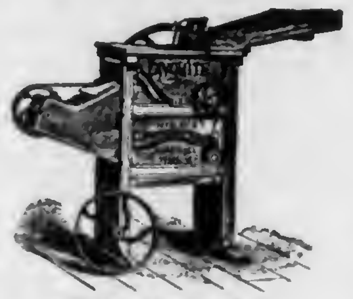
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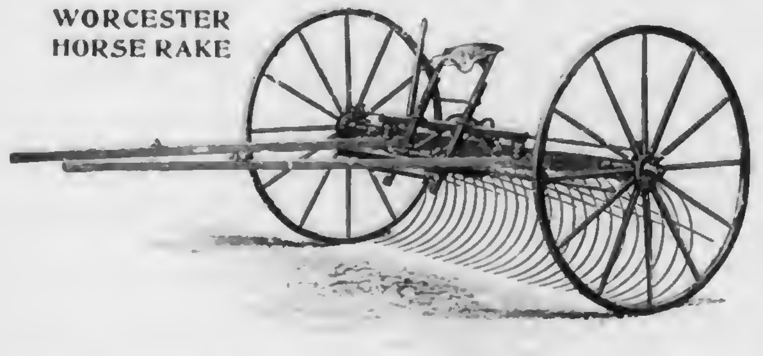

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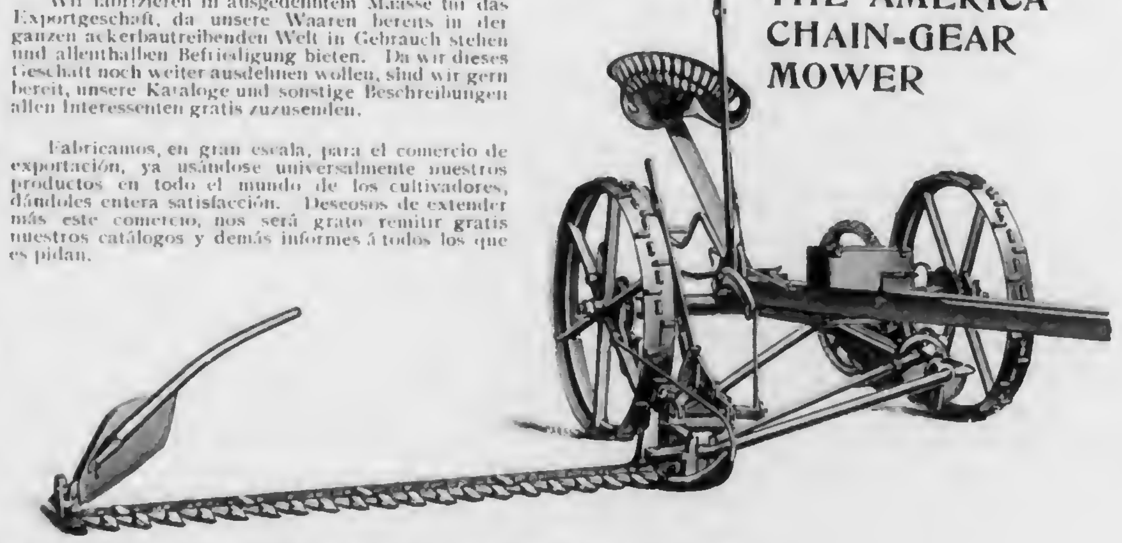

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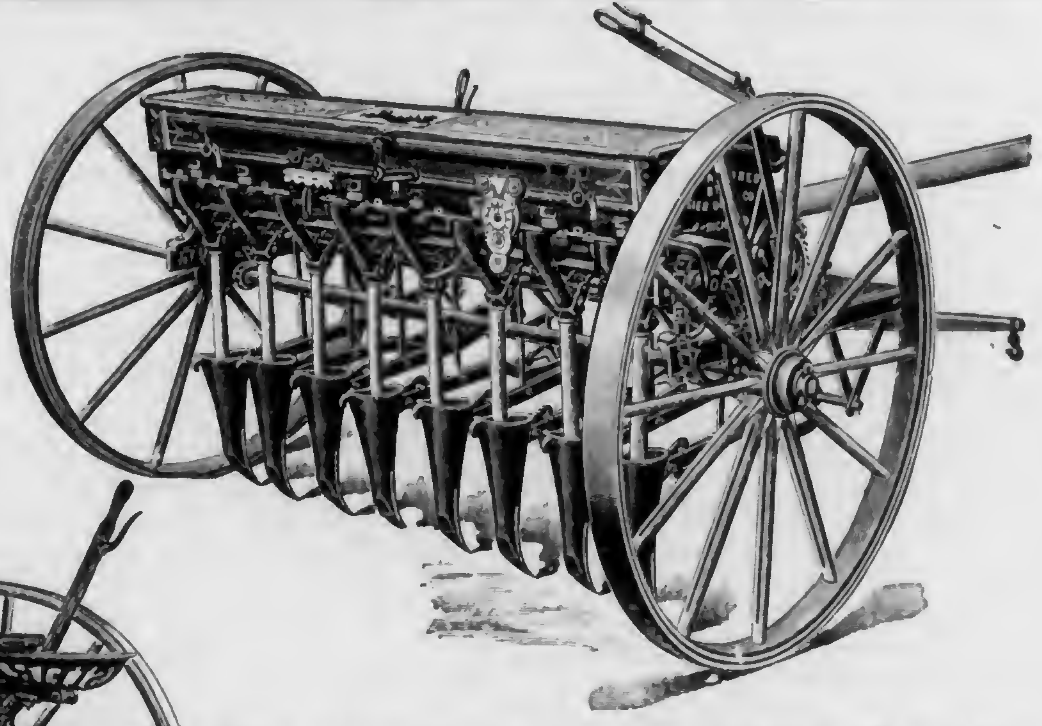

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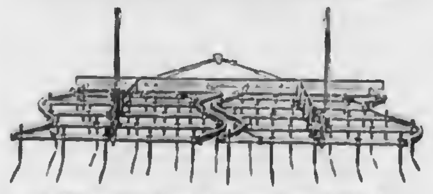
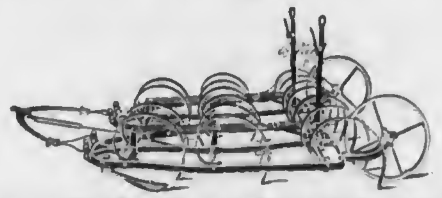
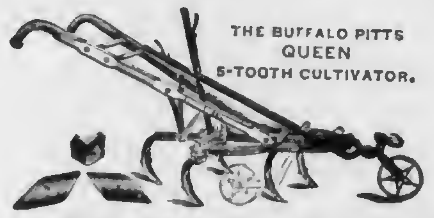


Buffalo Pitts Spring-Lever Spike Harrow.



Buffalo Pitts Combination Wheel and Runner Spring-Tooth Harrow.



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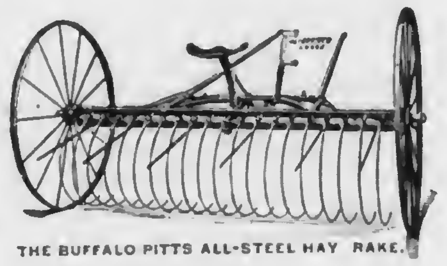

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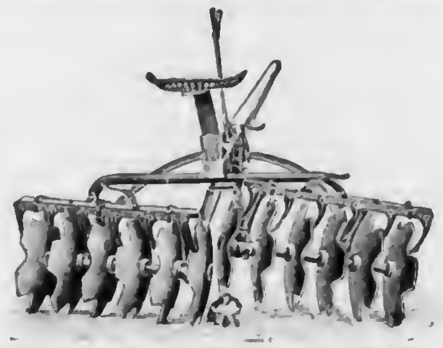

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Buffalo Pitts Spring Flexible Disc Harrow.

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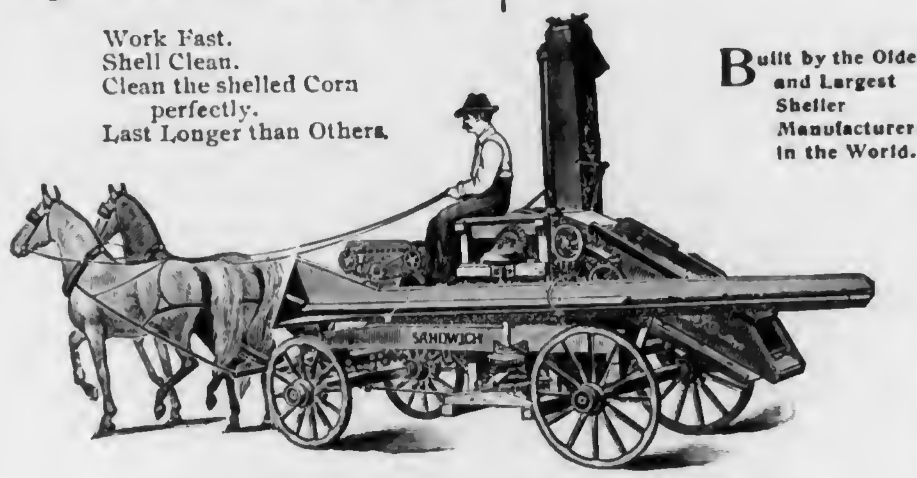

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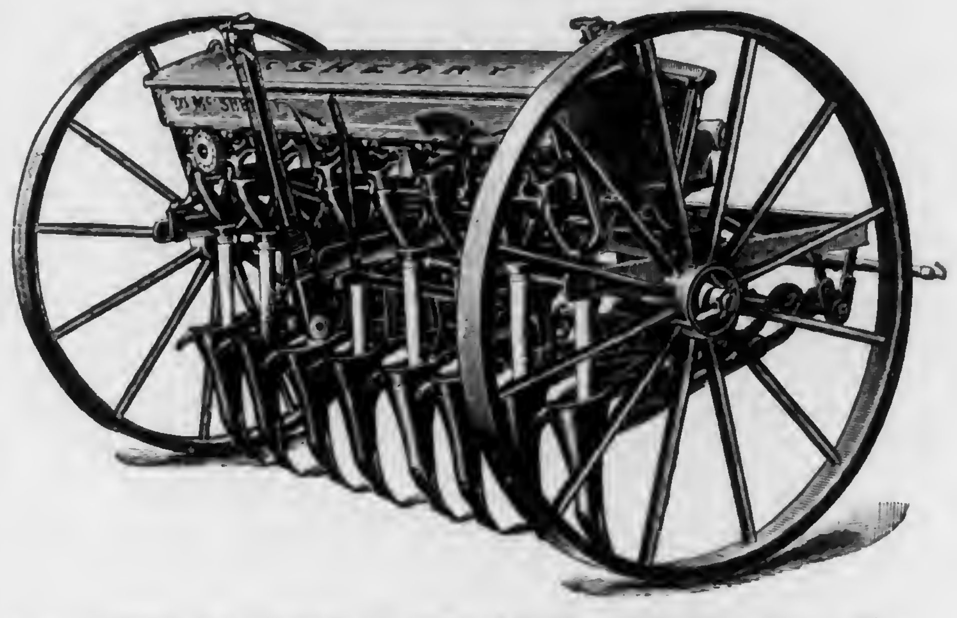

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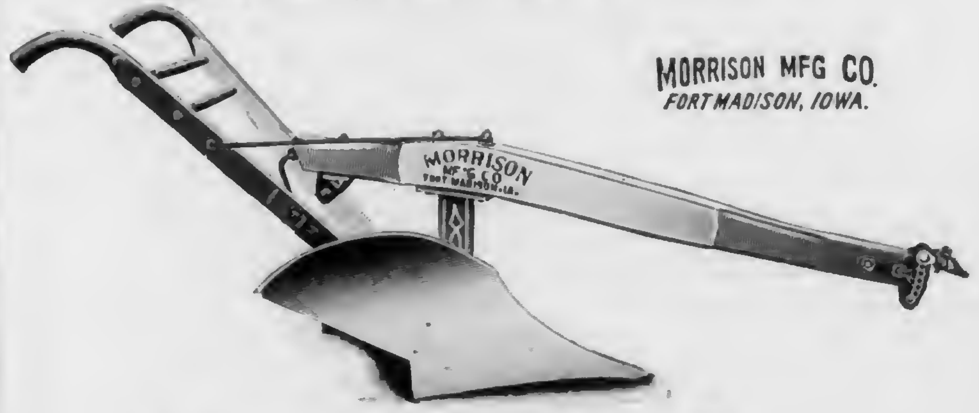

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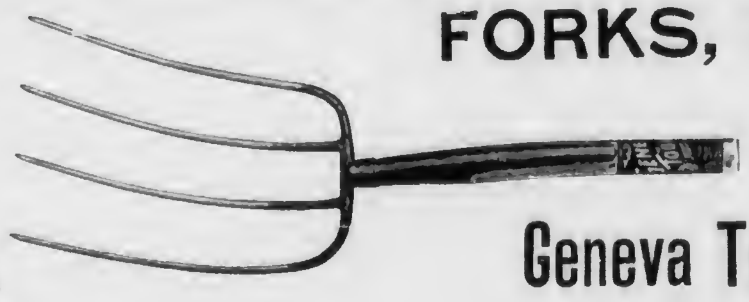

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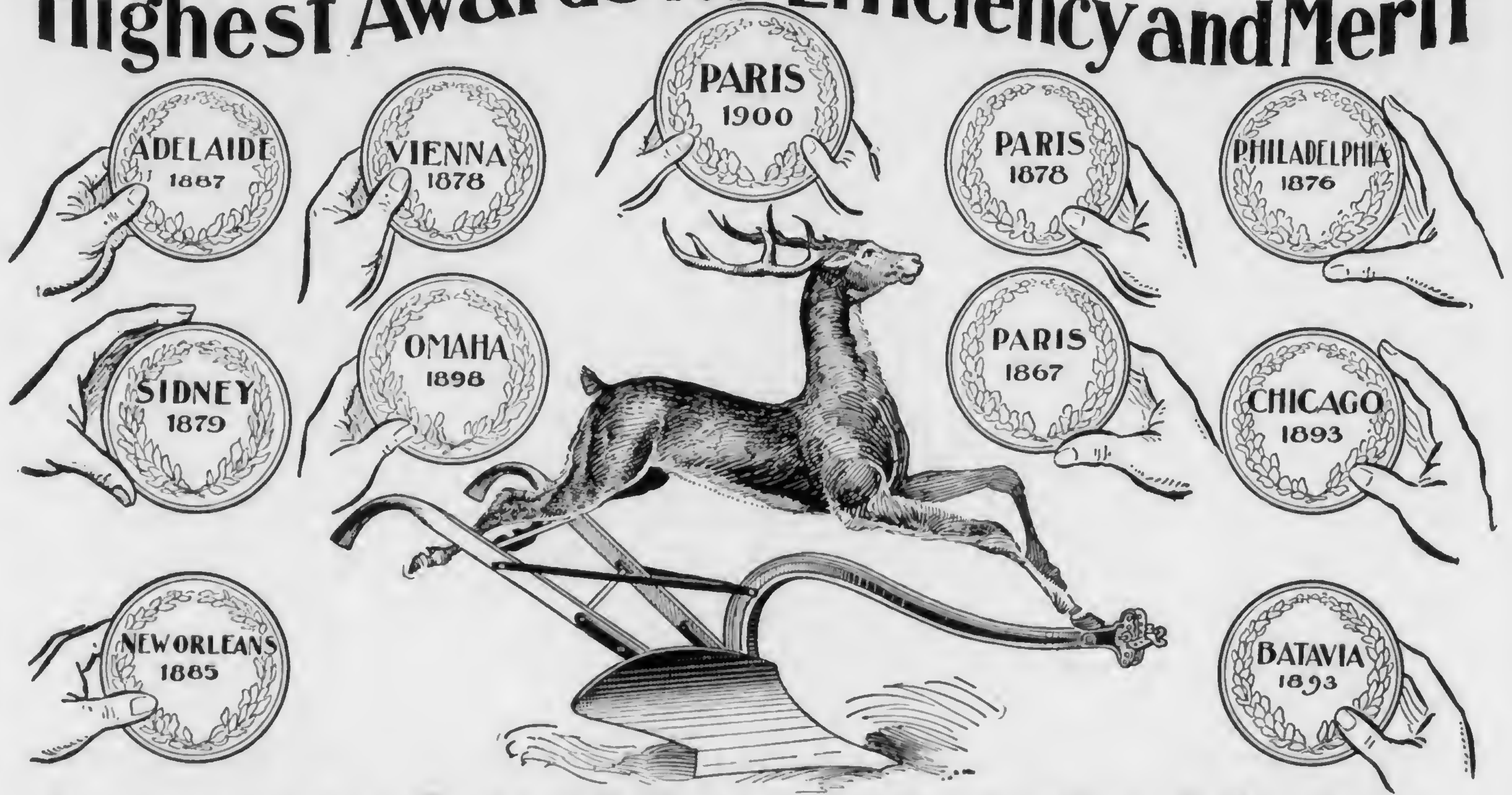

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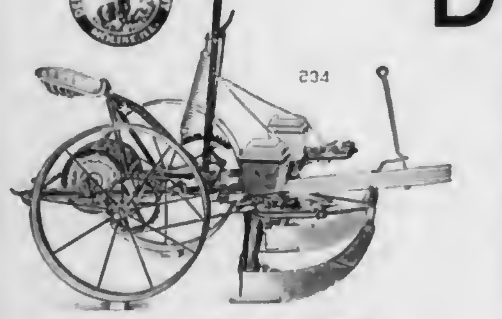

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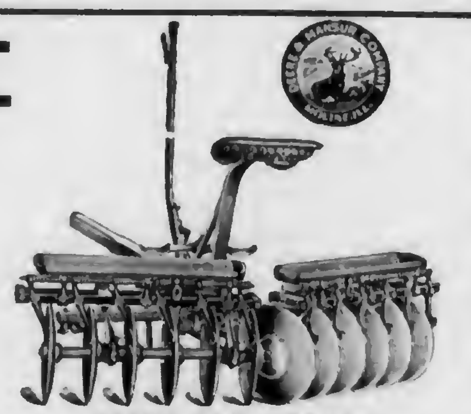

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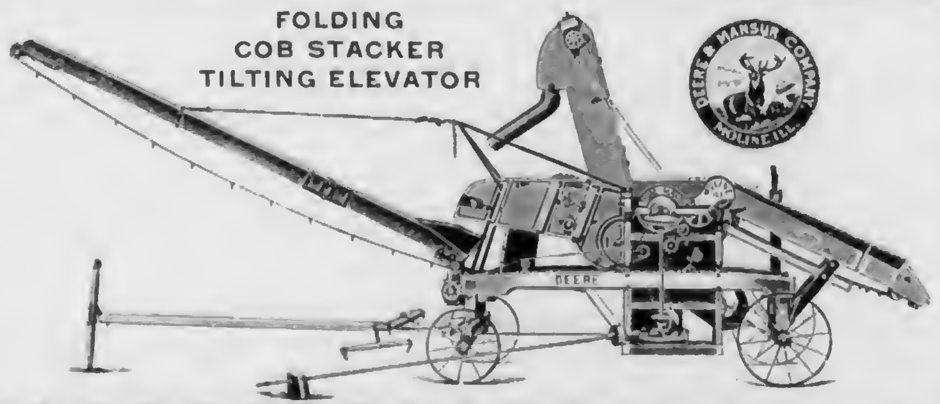

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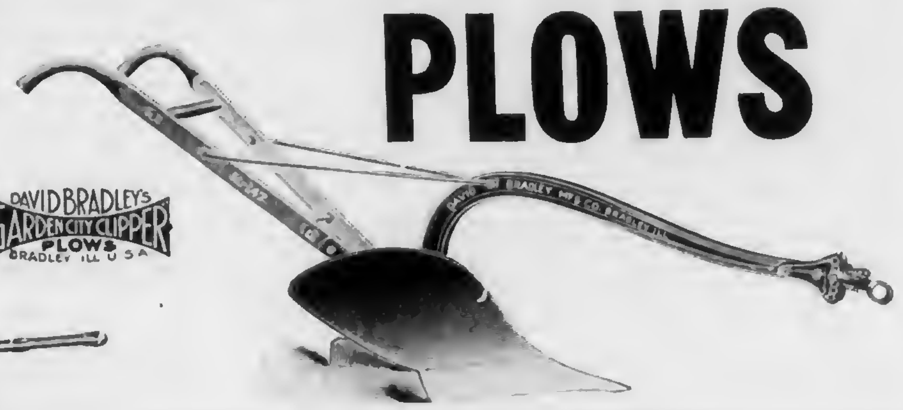

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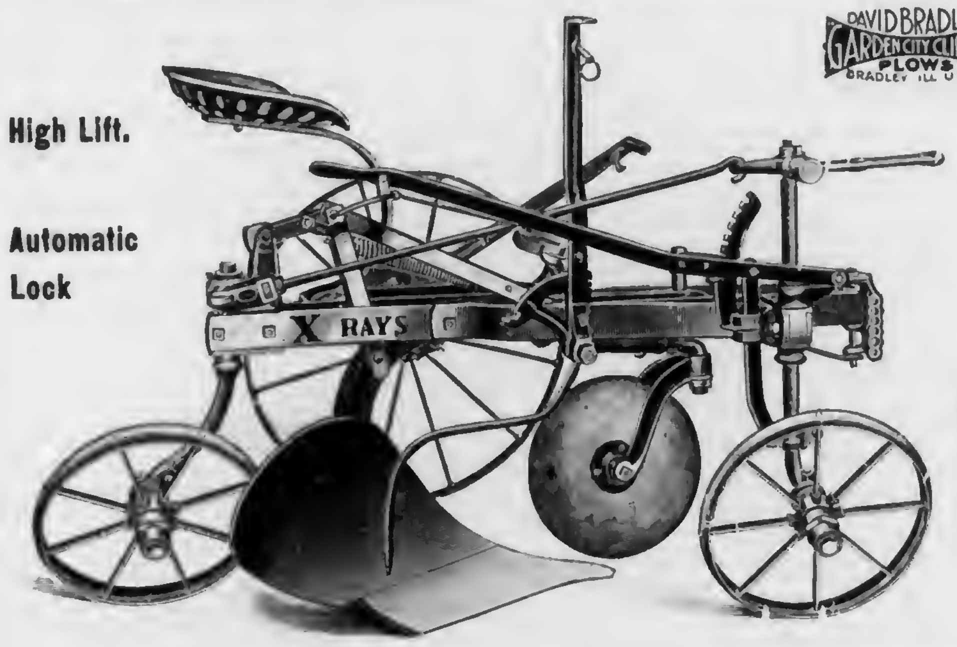

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Sulky and Gang Plows

Have a powerful **lifting spring.** A boy can handle them easily.
A patented stop carries the Plow on the frame and lightens draft.
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"Garden City Clipper" bottoms are put on these Plows.
Best work with **lightest draft.**
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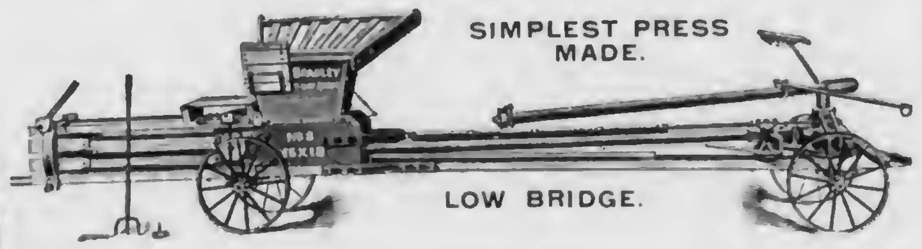

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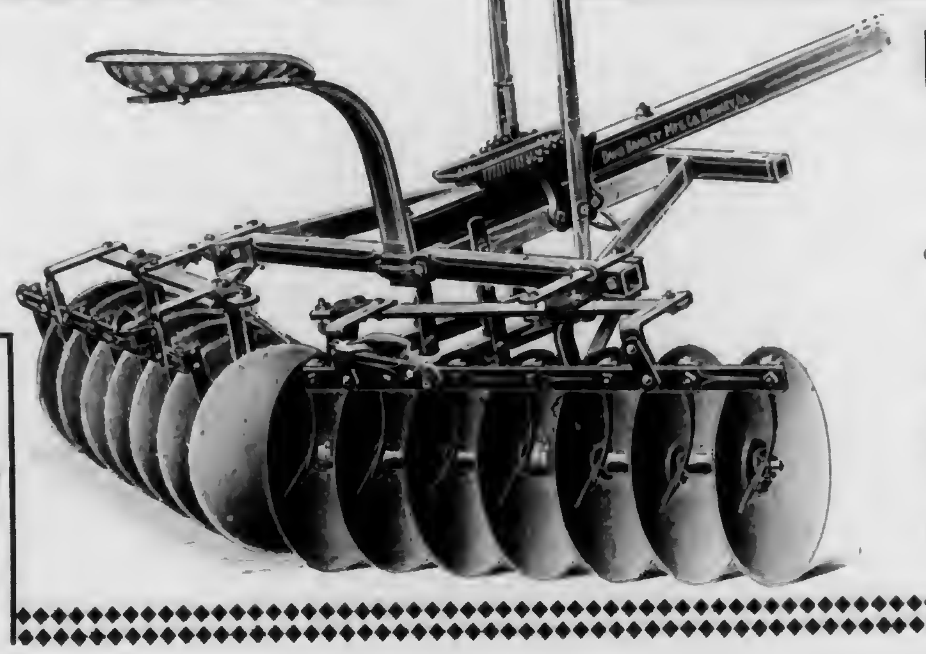

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Two Levers, one for each gang.

Boxes are separate, and can be quickly and cheaply renewed.

Scrapers have spring-steel shanks.

Sizes—16, 18 or 20-in. discs.

Width cut—6½, 7½ or 8½ feet.

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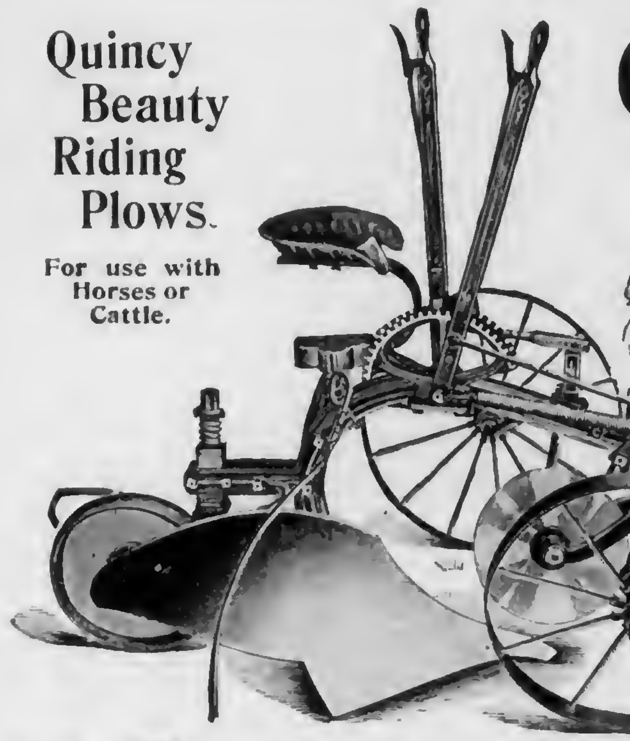

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will pulverize any soil.

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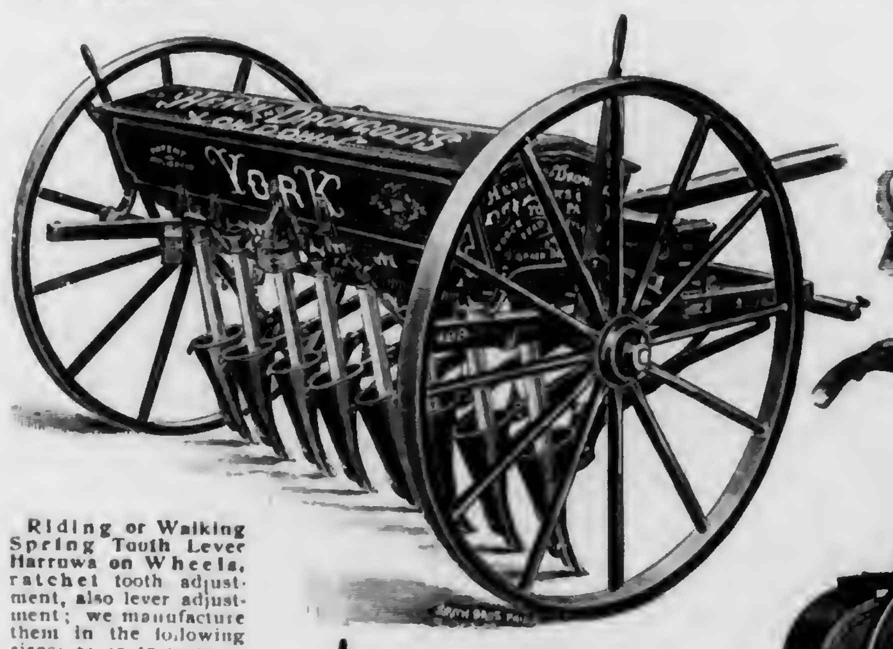

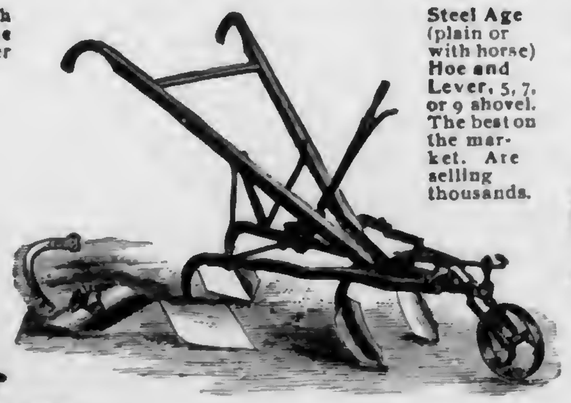

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10-inch,
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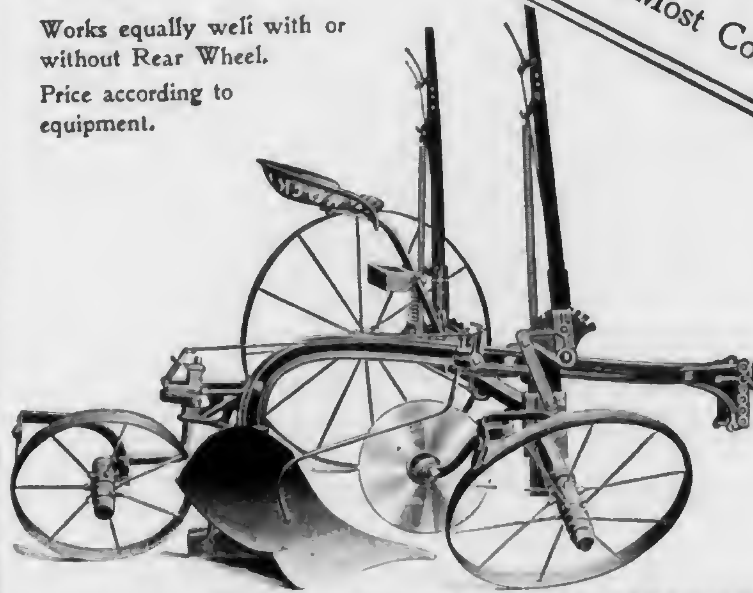

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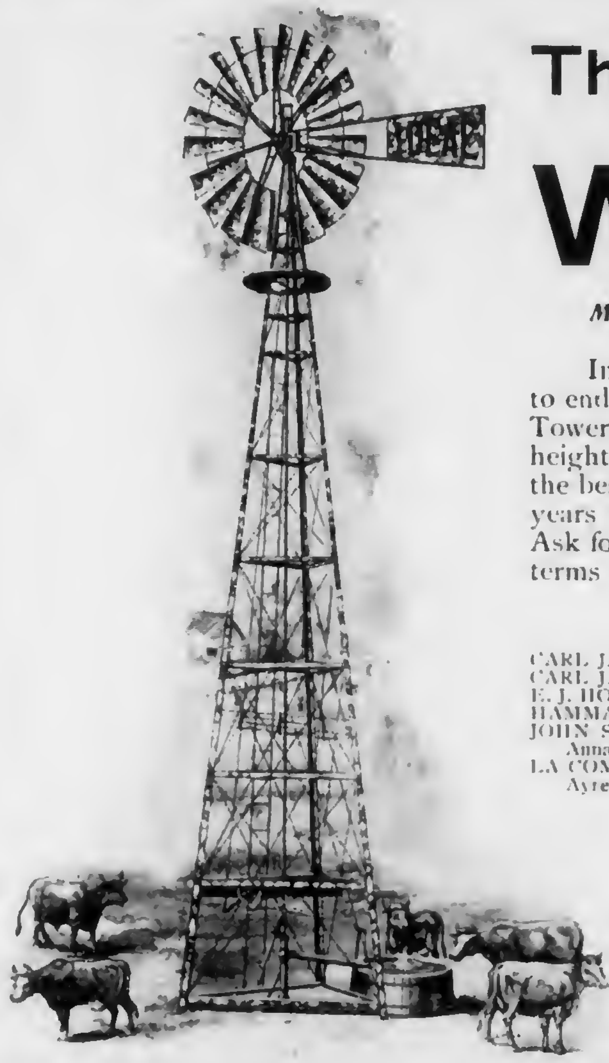

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Made in steel, all sizes, and galvanized after completed.

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Internal Back Geared 2½ to 1, very heavy throughout, to endure hard storms and give the best service; also Steel Towers, either 3 or 4 post, galvanized, in 10-ft. sections, all heights up to 100 ft. Mill and Tower guaranteed absolutely the best made in America. An experience of more than 30 years enables us to offer the best goods, the best service and advantages not found elsewhere. Ask for beautifully illustrated 48-page Booklet in English, French, Spanish or German, free, and terms to agents.

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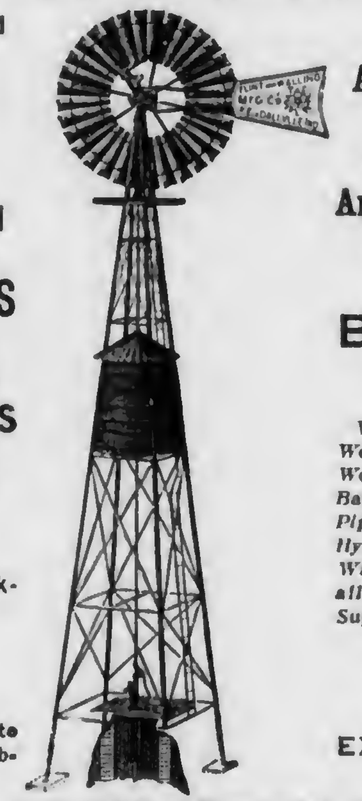

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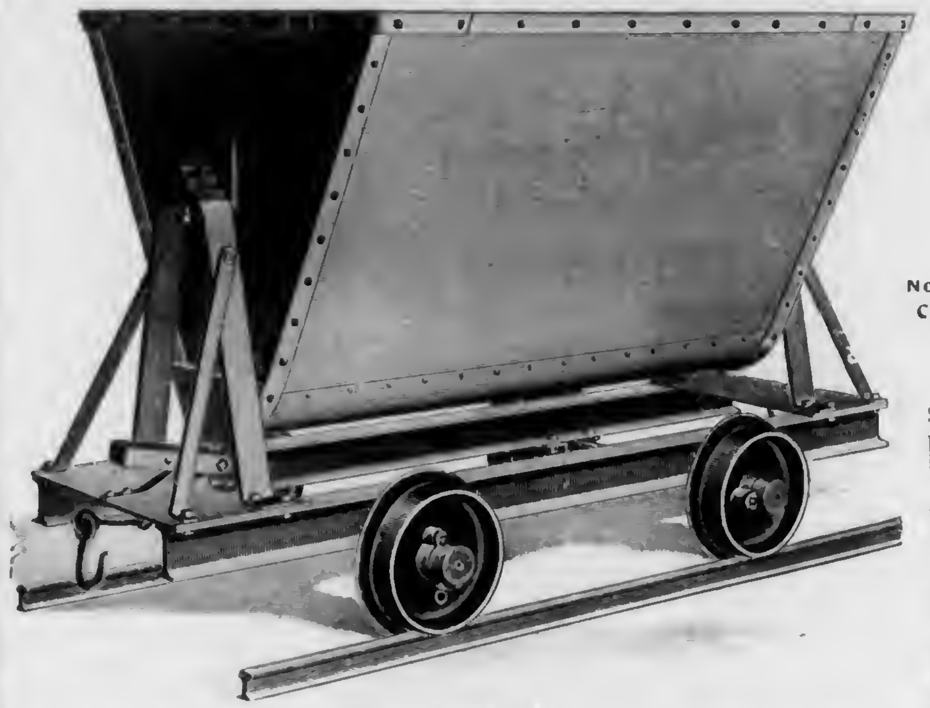

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Capacity 3 cubic feet.

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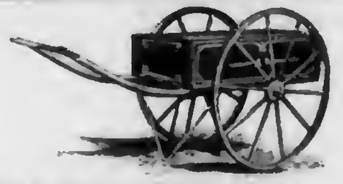
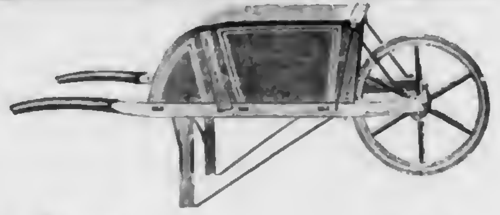
The Lewis Wheels are so constructed, having the spokes dovetailed in the flanges against the hub, and secured by a head on the outer and a shoulder on the inner side of the tire, thus combining tension and torsion strength, that it is impossible for the tires to come off or spokes to become loosened. The wheels revolve on a fixed shaft or axle bolt, similar to a buggy wheel, and run true and evenly, and the axle shaft serves as a brace to the handles.

The tubular iron handles are not pierced at any point by bolt or rivet. All other tubular barrows have bolt or rivet holes through handles, and are thereby materially weakened.

All our tubular barrows knock down completely for shipment and storage, and are easily set up by any one. The corresponding parts of barrows of same size are alike, and in case of loss or breakage of any piece, it can be readily replaced.





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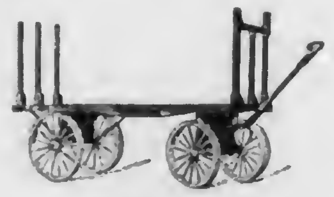

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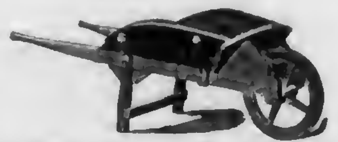

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Never Breaks or fails to do good work.

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IT HAS LONG LIFE, TOO.

5 Year and Capacity **GUARANTEE** With Every Machine.

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This machine is made in the midst of the greatest grain producing and stock feeding district in the world. It has proved itself equal to all the varied demands made upon it by the big feeder, dairyman and small farmer alike. It is especially adapted for handling **all kinds of grains,** either singly or mixed. Its speed and large **grinding capacity** under the most severe and varied conditions **are unequaled.** These, together with its light draft, convenience, simplicity, long life and durability, combine to make it the easy **peer of all other Sweep Grinders** on the market. Because of its simplicity of construction and the superior grade of material used in all wearing parts, the liability of breakage and wear is reduced to the minimum. There are **no gears to wear out.**

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Our Grinding **Burrs** to wear and do good work for **5 years.**

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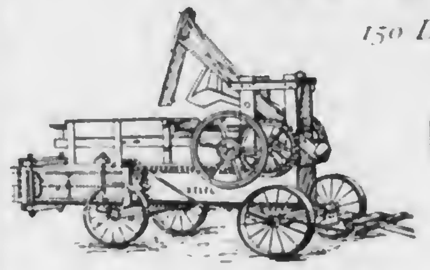

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ALL THE LATEST IMPROVED.

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CONTENTS The Code contains 800 pages of 75,000 Ciphers. 65,000 have sentences, and 10,000 are blanks, enabling the addition of private phrases under their proper headings.

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Emery, to cut fast, must run fast.

Luthers' Automatic Bi-Pedal (foot-power) has four times the speed of other grinders.

A whole sickle ground without the least fatigue.

Completely supplants the sand grindstone for sharpening tools.

Weight of Bi-Pedal, 36 pounds.

A revolution in sickle and tool grinding.

The price suits every one.

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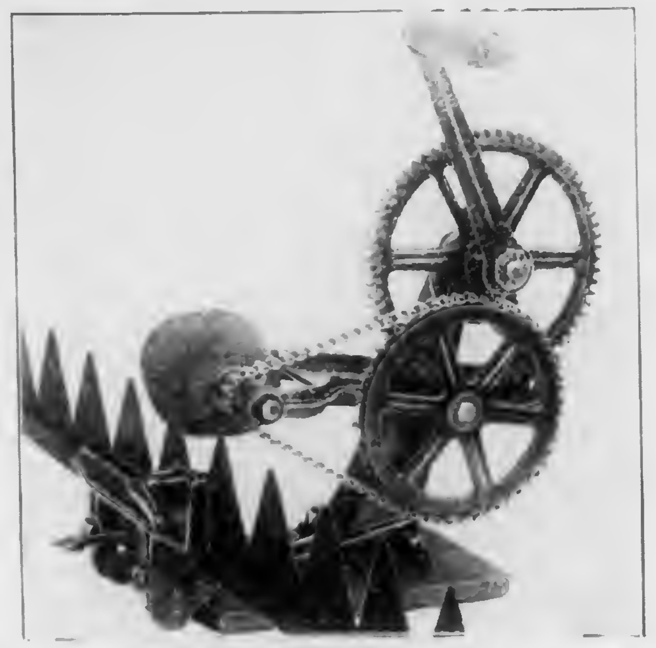

The "CHALLENGE" Automatic (hand-power) has Eleven Parts. Length of Crank Handle, seven inches. Speed, twenty-seven turns of Emery Wheel to one of the Crank. Weight, 18 pounds.

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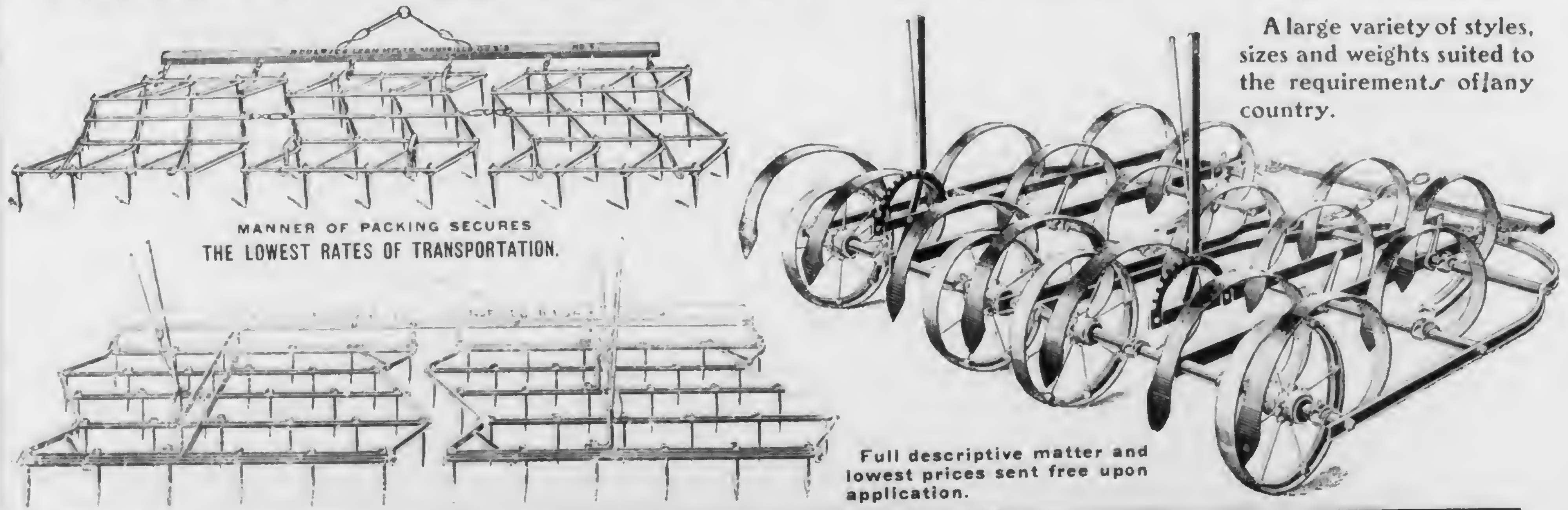
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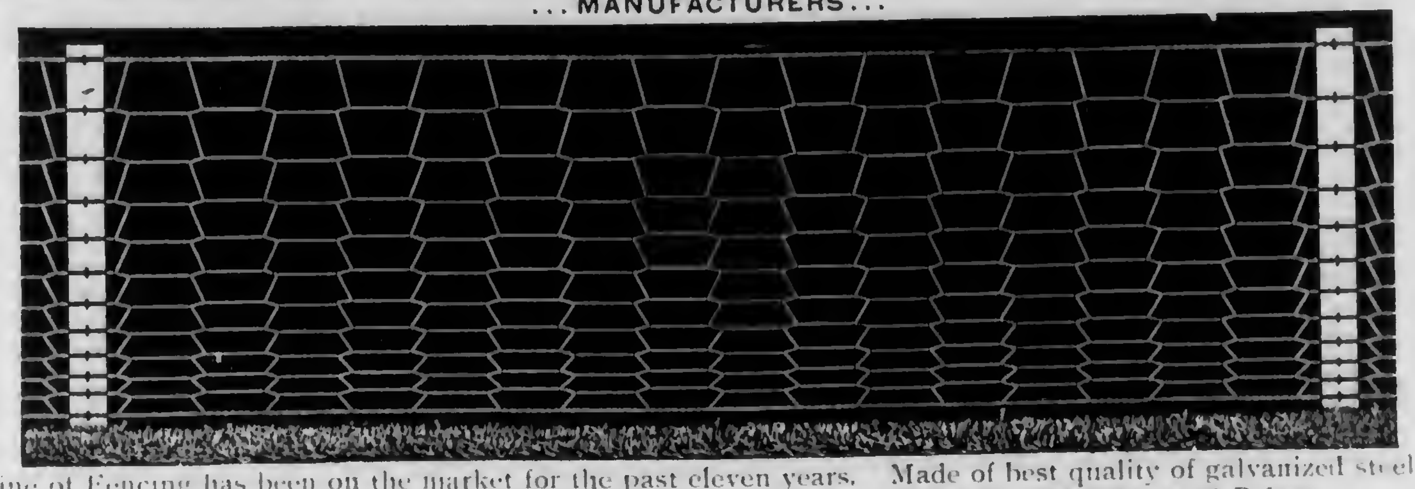

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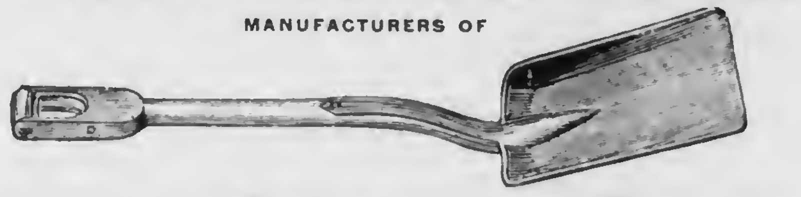

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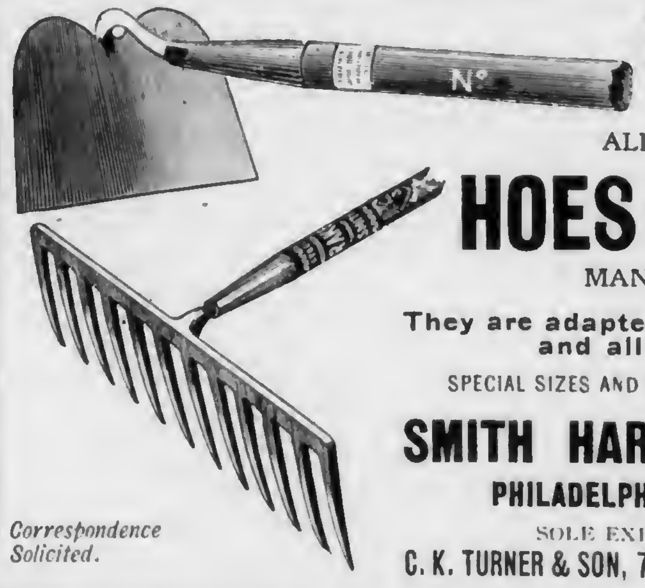

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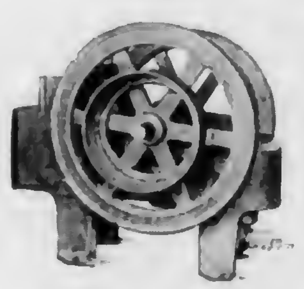

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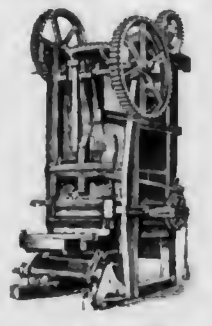

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We Manufacture for Export all Kinds of

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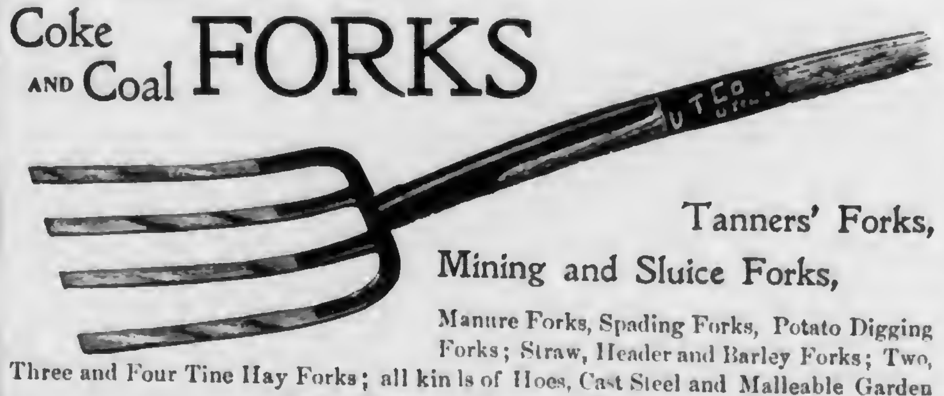

Tanners' Forks,

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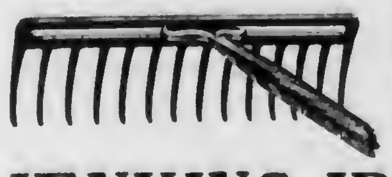
Manure Forks, Spading Forks, Potato Digging Forks; Straw, Header and Barley Forks; Two, Three and Four Tine Hay Forks; all kinds of Hoes, Cast Steel and Malleable Garden Rakes, Potato and Manure Hooks.



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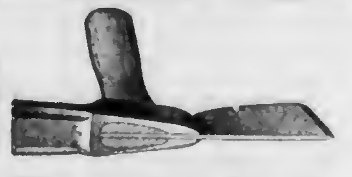

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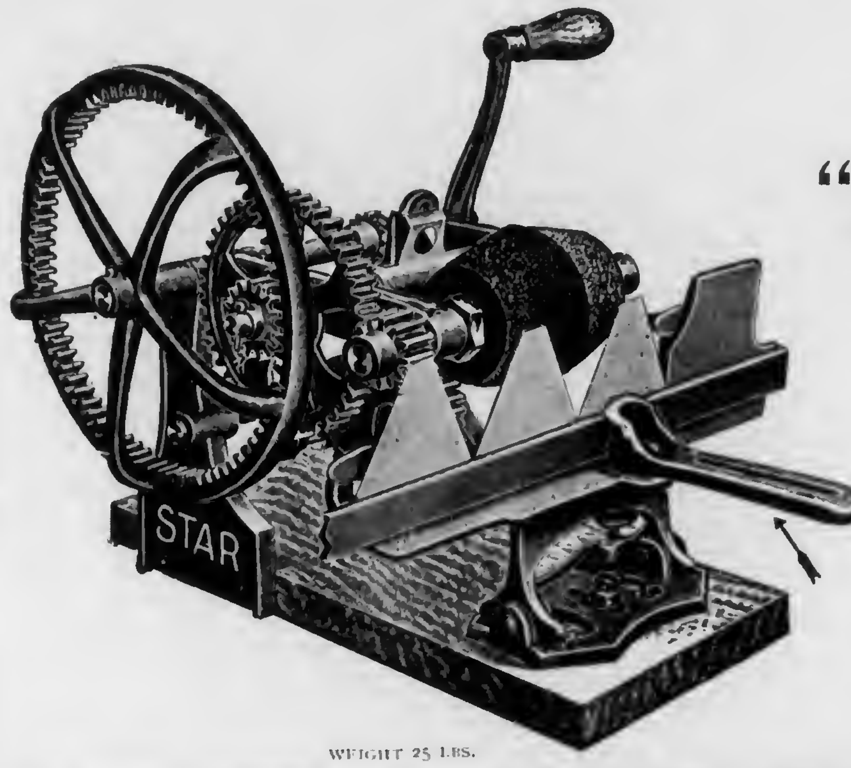

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AUTOMATIC

"Star" Sickle and Tool Grinder

Or Mowing Machine Knife Grinder.

Grinds a perfect bevel on new or old knives, and positively cannot grind out heel, nor grind off the points.

Knives are set so you can see what you are doing. It grinds out the nicks.

It can be taken to the field with mower, works well on the ground, don't have to be fastened to wheel of mower.

Guaranteed to do good work when properly adjusted, and against breakage in transit. Stones are guaranteed for one year.

Our prices are cheaper than you can buy a so-called Sickle-Grinder for.

These machines are indorsed by all the leading Harvesting Machine Companies in the United States and Europe.

Write us and we will send you a handsome poster with full-size cut of our Star Sickle and Tool Grinder, printed in four colors, and a catalogue and price list of everything made in Emery Grinders and Emery Wheels.

CLIZBE BROS. MFG. CO., Plymouth, Ind., U. S. A.

Established 1848. Established 1848.

THE WHITMAN & BARNES MFG. CO.

Manufacturers of Mower Knives, Sections and Guards, Harrow and Thresher Teeth, Cultivators and Repair Parts, Lawn Mowers and Grass Catchers, Haying Tools, Hose, "Diamond" and "Dollar" Knife Grinders, Grain Drill Tubes, Link Chain Belting, Binder Canvases and Covers, Agricultural and Machinists' Wrenches, Twist Drills, Files, Oil Cans, Etc.

A FULL LINE OF AGRICULTURAL AND MACHINERY SUPPLIES. WRITE FOR CATALOGUE AND PRICES.

No. 111 Chambers Street, New York City, U. S. A. European Office: No. 149 Queen Victoria St., London, E.C.

Has Sheet Steel Bottom and Heavy Cotton Duck Body.

"W. & B." Grass Catcher.

Fits the W. & B. High Wheel, New Electric, Norka and all other pattern Lawn Mowers.

No. 1 fits sizes 10, 12, 14 and 16-inch. No. 2 fits sizes 16, 18 and 20-inch.

7 Sizes

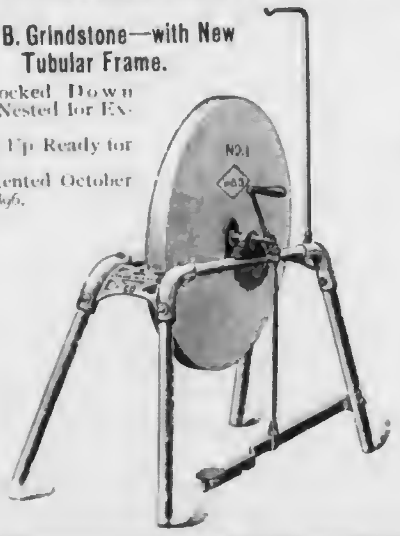
Improved "ACME" All-Steel Wrench.

W. & B. Grindstone—with New Tubular Frame.

Knocked Down and Nested for Export.

Set Up Ready for Use.

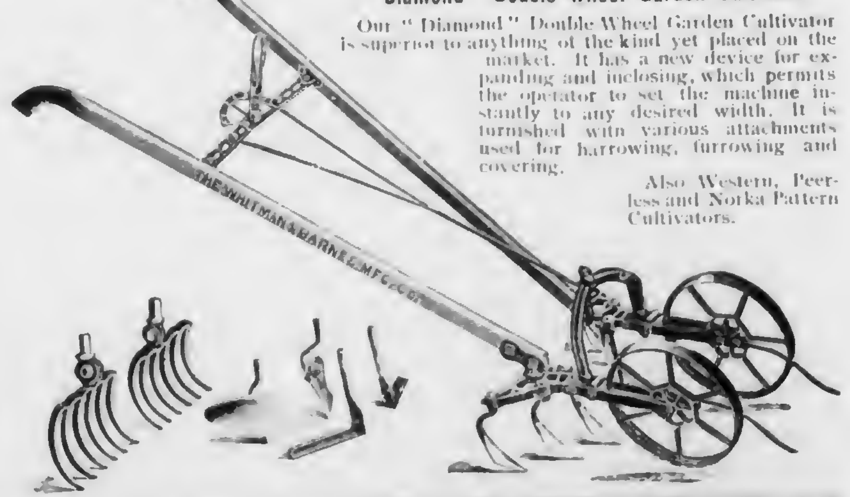
Patented October 20, 1896.



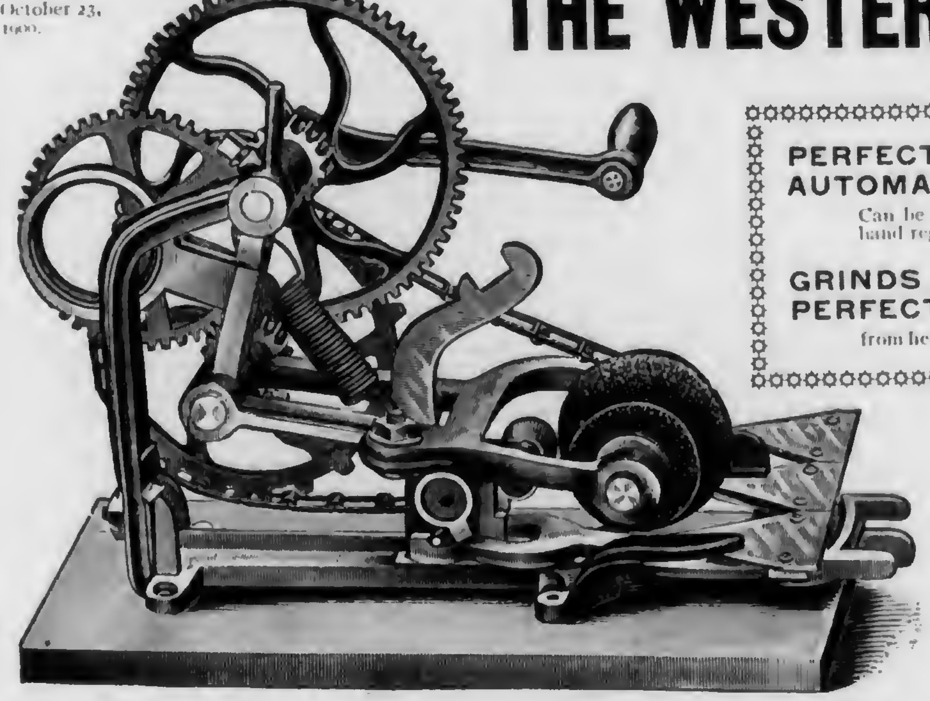
"Diamond" Double Wheel Garden Cultivator.

Our "Diamond" Double Wheel Garden Cultivator is superior to anything of the kind yet placed on the market. It has a new device for expanding and inclosing, which permits the operator to set the machine instantly to any desired width. It is furnished with various attachments used for harrowing, furrowing and covering.

Also Western, Peerless and Norka Pattern Cultivators.



Patented October 23, 1900.



THE WESTERN SICKLE AND TOOL GRINDER

PERFECTLY AUTOMATIC.

Can be changed from an automatic to hand regulating in a moment.

GRINDS SICKLES PERFECTLY

from heel to point and from end to end.

USES THE BEST EMERY WHEELS MADE IN AMERICA.

NEEDS NO SKILLED MECHANIC.

CAN BE OPERATED BY ANYBODY.

MANUFACTURED BY

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BENICIA AGRICULTURAL WORKS,

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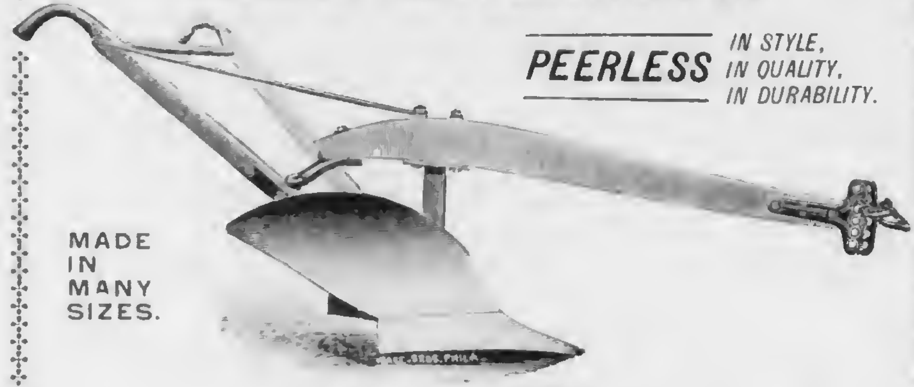
Makers of WALKING PLOWS, SULKY AND GANG PLOWS, HARROWS, CULTIVATORS, SEED SOWERS, HAY PRESSES, HAY TOOLS, WAGONS, CARTS, ETC.



PEERLESS *IN STYLE, IN QUALITY, IN DURABILITY.*

MADE
IN
MANY
SIZES.

THE CELEBRATED

PEERLESS SINGLE PLOWS,

STEEL AND CHILLED.

The result of thirty years' experience in building plows to suit the many soils found on the Pacific coast.

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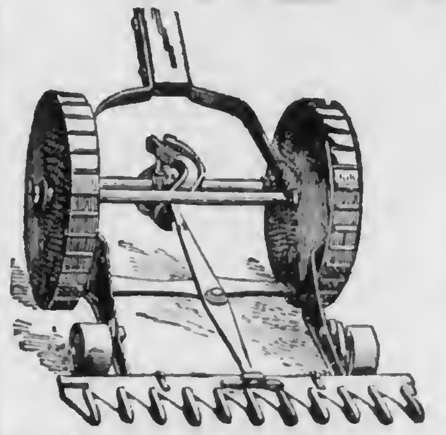

THAT WILL
KILL ALL THE WEEDS
IN YOUR LAWNS.

If you keep the weeds cut so they do not go to seed, and cut your grass without breaking the small feeders of roots, the grass will become thick and weeds will disappear.

THE CLIPPER WILL DO IT.

CLIPPER LAWN MOWER CO., Norristown, Pa., U. S. A.

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Manufacturers of
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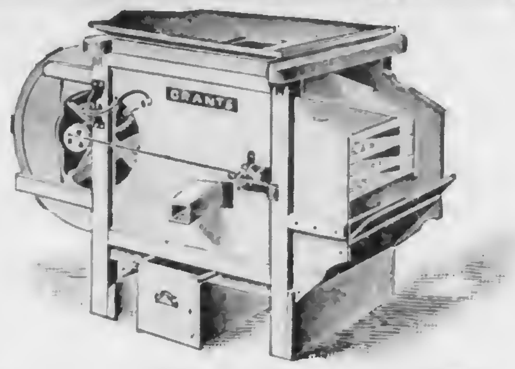

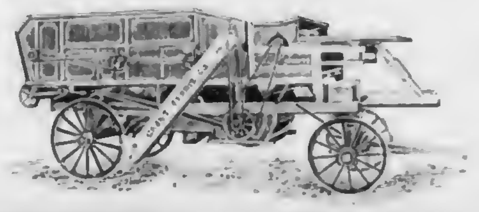

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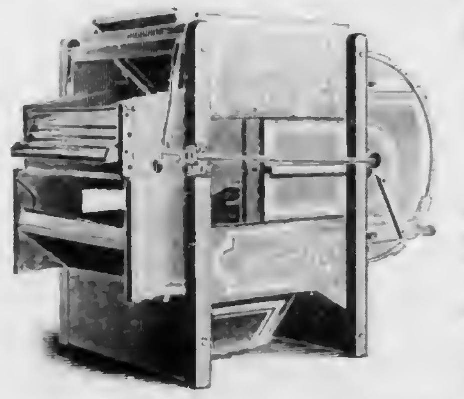

OUR MOTTO IS QUALITY.

ESTABLISHED 1858.

C. H. MICHAEL, Manufacturer of Fanning Mills exclusively.

Equipped with 9 sieves and screens, 2 zinc hurdles, a chess-board, tail-board and a spout, suitable for all requirements of a farmer.

Size: 27 inches wide, 48 inches long and 48 inches high.

Knocked down and boxed with matched lumber for export, occupying a space of thirty cubic feet.

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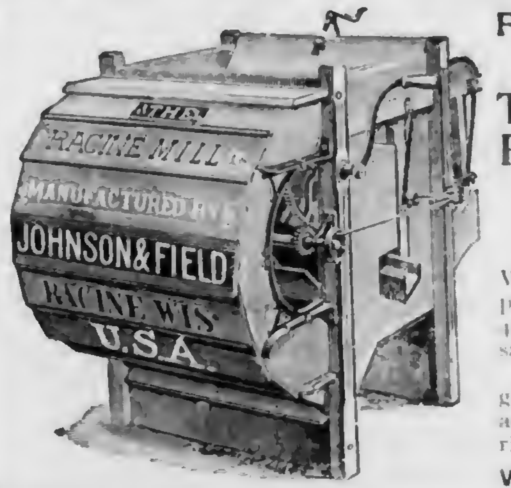

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The "Racine"
Farm and Warehouse
FANNING MILLS.

FOR EXPORT TRADE

We pack three mills in each case all parts carefully marked total cubic space 45 feet, or 15 feet for each mill. We save you freight.

Made in six sizes for cleaning and grading wheat barley, corn oats, rye and all kinds of grass seeds, beans, peas, rice, coffee lentels, etc.

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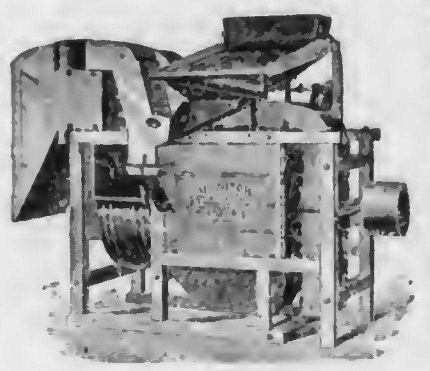

Wheat Scourers,
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Coffee Milling Machines,
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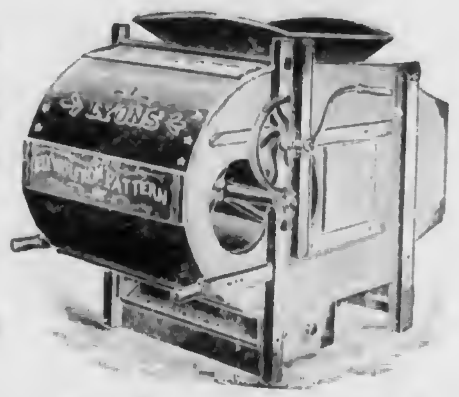

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AMERICAN STEEL AND WIRE CO.

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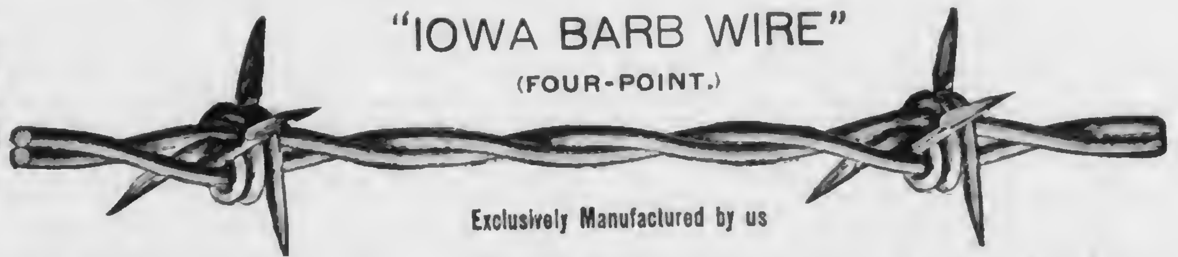
STEEL PLATES and SHEETS of every grade--STEEL BARS of all shapes.
STEEL AGRICULTURAL and MACHINERY SHAPES.

COLD DRAWN SHAFTING, HOMOGENEOUS STEEL, HOT ROLLED STEEL SHAFTING { ROUNDS, SQUARES, HEXAGONS FLATS AND ODD SHAPES.

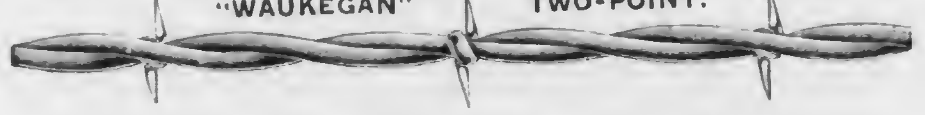
Styles of Packages.

"IOWA BARB WIRE"
(FOUR-POINT.)

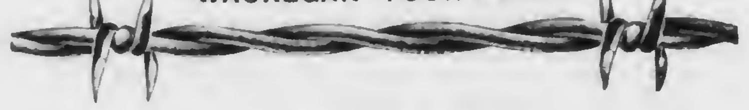


Exclusively Manufactured by us

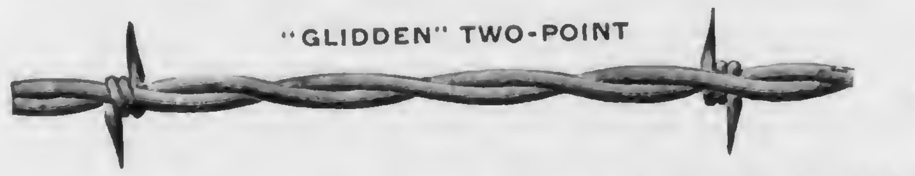
"WAUKEGAN" TWO-POINT.



"WAUKEGAN" FOUR-POINT.



"GLIDDEN" TWO-POINT



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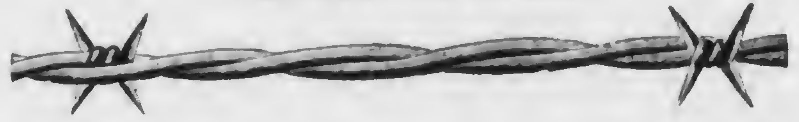
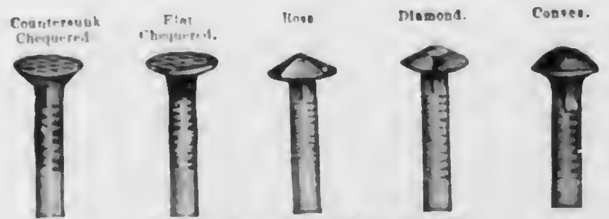


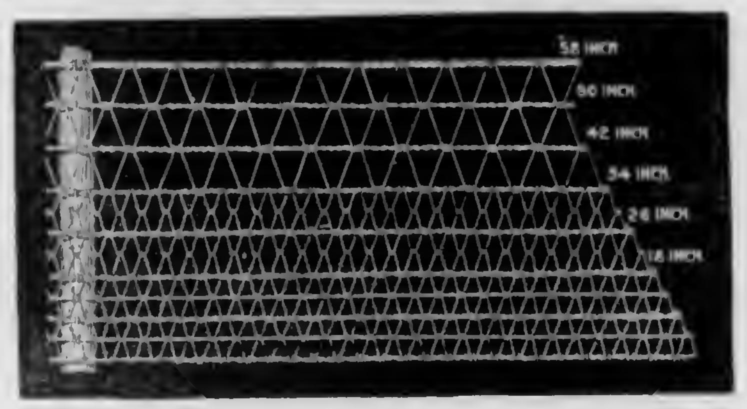


Some Special Nail Heads.

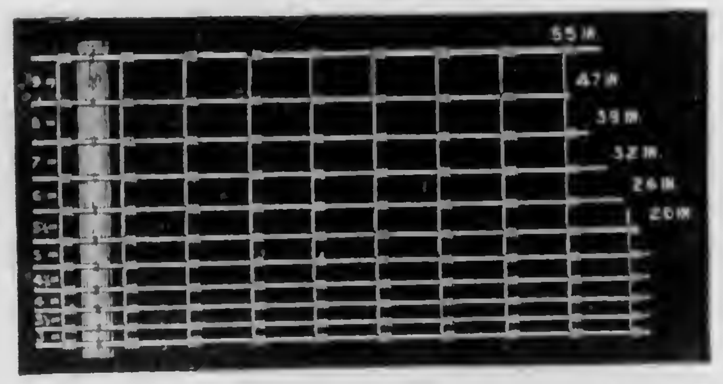
WIRE NAILS. Round, Oval or Square Wire.

Every Style of Head or Point. Our Nails are Guaranteed First-class in every respect, and will be found Stiffer, Stronger and Better made than European Nails. Packed in wooden kegs and cases, canvas bags and paper parcels of various sizes.

WOVEN WIRE FENCES. All made of Hard, Strong Steel Wires, heavily Galvanized.



ELLWOOD Steel Fences—6 heights, 6 styles.



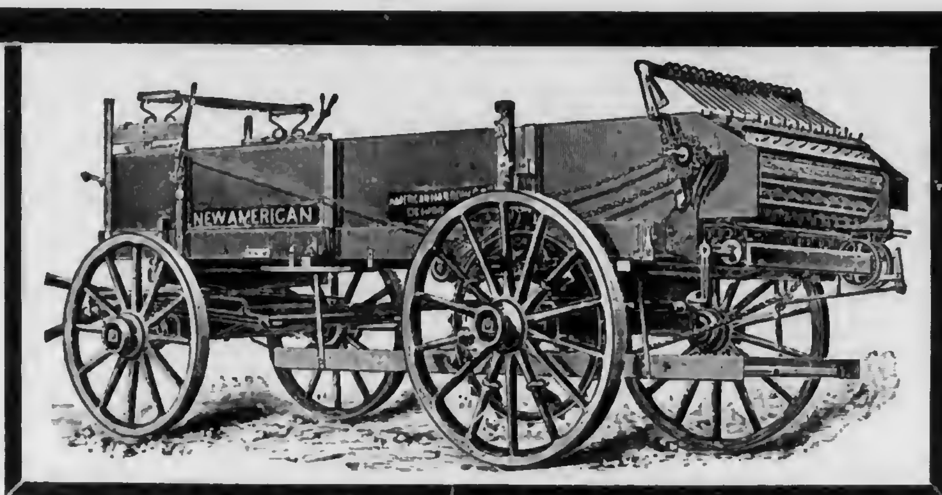
55 IN.
47 IN.
39 IN.
32 IN.
26 IN.
20 IN.

AMERICAN Field and Hog Fences—6 heights, stays 12 in. or 6 in. apart.

The wires in these fences are large enough for all ordinary requirements, the fences being cheap, durable and efficient—will last a lifetime. Put up in rolls of 20 and 40 rods—sold by the rod. Perfectly adapted to fencing railroad rights of way, farms, fields, orchards, vineyards, etc.

Write for prices, catalogues, etc., covering any of the above, to our offices at 71 Broadway, New York, U. S. A. 29 Great St. Helens, London, E. C.

AMERICAN STEEL AND WIRE CO.



Cog-wheel gears always grate and groan and need oil; don't they?

Even in a grindstone or feed cutter.

And how easily cog-wheel gears get out of kilter.

You've got to be careful with all kinds of cog-wheel gears—that's sure.

Now the gear in our

NEW AMERICAN MANURE SPREADER

is a Sprocket and Chain.

It runs freely. Needs almost no care at all. Needs little oil. Almost impossible to bend it out of working order.

Is readily and cheaply fixed if it ever does break. It allows a "slack" to aid the horses in starting up—just the same as the train of cars principle.

It's the easiest running, strongest, least bothersome gear on any Spreader in the world.

But that isn't all. There are 8 more strong features in our

NEW AMERICAN SPREADER

we'd like to tell you about.

6-color ivory memorandum book and our handsome new catalog, if you ask.

Les roues d'engrenages grincent et grognent toujours et ont besoin d'huile; n'est-ce pas?

Même dans une meule ou dans un hache-paille.

Et la facilité avec laquelle elles se détraquent!

Il faut se méfier de tous les genres de roues d'engrenage voilà qui est certain.

Maintenant l'engrenage de notre

NOUVEAU DISTRIBUTEUR D'ENGRAIS AMÉRICAIN,

consiste dans un Hérisson avec Chaine.

Il fonctionne aisément. Il n'a à peine besoin de sonis d'aucune sorte. Nécessite peu d'huile. Presque impossible de le détraquer.

Il est facile à réparer, et à bon marché, si jamais il se casse. Il est construit de façon qu'il y a un "mou" pour aider les chevaux à se mettre en route—exactement le même principe que dans un train de wagons.

C'est l'engrenage fonctionnant le plus aisément; c'est le plus solide et le moins ennuyeux des engrenages de tout distributeur au monde.

Mais ce n'est pas tout. Il y a 8 autres traits saillants dans notre

NOUVEAU DISTRIBUTEUR AMÉRICAIN,

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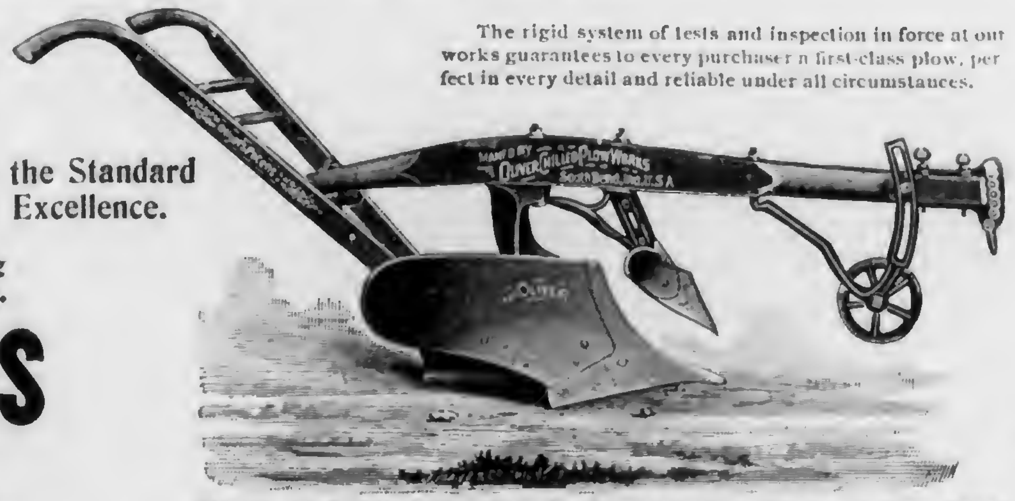
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EXPORT IMPLEMENT AGE

Vol. III. Philadelphia, Pa., U. S. A., March, 1901. No. 6.

AMERICA AND THE WORLD'S TRADE.

The desire of many European merchants to more fully acquaint themselves with the probable outcome of competitive conditions in the United States, with reference to trade and manufacturing throughout the world, is indicative of a coming change in the spirit of trade between Europeans and Americans in the United States.

The principle of protection, as in all countries, still exists in the United States, but its results now are seen throughout the world in its growing export trade. The force and energy of competition is as active and powerful as in European countries, and in many respects more so. Its enormous and steadily growing manufacturing capacity is attracting the solicitous attention of the world, and the meaning of it is sought.

Looking at the United States from the purely European or trans-ocean standpoint, there are several forces, conditions and agencies to be noted by the merchants and dealers of all countries.

The United States has suddenly become one of three great forces in the world of commerce, England and Germany being the other two. Its tariff system and its gold monetary basis, followed by an unprecedented activity in ship building, presents a problem to the international merchants of the world, often referred to as exporters and importers, which points to a possible revision of trade relations. With the cheapest methods of production in the world, with cheapest railroad freight rates in the world and with cheapest labor, as measured by product per man by the aid of machinery, the United States presents to the merchants of the world a problem deserving of more than a passing study.

Another factor is its industrial combinations. The Americans themselves are at a loss to know what they signify. But there they are, some hundreds of them, representing thousands of millions of dollars, ostensibly created to make more money by combination than before.

Added to all these forces for the European merchant to contemplate is the giant railroad combinations extending from the Atlantic to the Pacific, to which are being and to be attached may be mentioned ship lines to carry their traffic westward to the Oriental countries, and eastward to Europe and the Far East, until they meet in world-wide embrace.

With its vast Northwest interior and enormous wheat-producing plateau, with its dozen gulf states (the greatest cotton region in the world), with its chains of meat-packing factories, with its Appalachian Mountain chain underlaid with rich veins of exportable coal, with its largest deposits of steel-producing ores that furnish the cheapest steel in the world, with solid fuels in the forms of coal and coke, liquid as petroleum, gaseous as natural gas, with timber stretches whose fringes are furnishing lumber for the antipodes, and with machinery whose aggregate multiplies the mechanical power of its entire population by ten, there is constituted a resultant agency, energy, power and capacity which demand for their field of action the entire world.

It is to this power or capability, so largely still latent, that the consideration of the world's importers and exporters is called. A decade ago this power, this capability, did not exist. To-day it does. It is not as Americans, but as citizens of the world, that we ask in which direction does this new and mighty force point. This new factor is not a sword to overturn thrones and destroy, but it is a silent power that will penetrate every land, palace and hamlet with its stimulating, civilizing and educational influence. It will place at the feet of Europe, Asia, Africa and the new Australian empire the best results of its genius. Its coming fleets will carry the abundance of its fields and shops to all who may want, not with hostile thought, but with the feeling of devotion to a high ideal which rises in the human mind when it achieves grand results along the pathway of human development.

State of North Dakota, U. S. A.—Gasoline engine operating a threshing machine. (Illustration by permission of the Kinnard Press Co., Minneapolis, Minn., U. S. A.)
Staat Nord Dakota, Ver. Staaten.—Gasolin-Motor, eine Dreschmaschine treibend. (Nachgedruckt mit Erlaubnis der Firma Kinnard Press Co., Minneapolis, Ver. Staaten.)
Etat de Dakota du Nord, Etats-Unis.—Moteur à gazoline faisant marcher une batteuse. (Reproduit avec la permission de la maison Kinnard Press Co., Minneapolis, Minn., Etats-Unis.)
Estado de Norte Dakota, E. U. de N. A.—Motor de gasolina moviendo una trilladora. (Reproducido con permiso de la casa Kinnard Press Co., Minneapolis, E. U. de N. A.)

TRADE GROWTH.

The United States Taking a Leading Position.

The General Survey of Foreign Trade introductory to the volume on "Commercial Relations With the United States," which formed the subject of special letters from the President and the Secretary of State to Congress, has just been published by Frederick Emory, the head of the Bureau of Foreign Commerce and compiler of this matter, in the shape of a special number of the "Advance Sheets of Consular Reports." As the title indicates, the survey is a compact presentation of the most important and instructive features of the enormous mass of trade information which has been collected by the United States consuls throughout the world during the past year.

According to the United States Treasury returns the imports of this country for last year in round numbers amounted to $830,000,000 and the exports $1,478,000,000, an increase of over $30,000,000 in the import trade as compared with the preceding year and of $202,480,000 in exports. Of the exports, the percentage of manufactured goods rose to a very considerable extent, and our industrial growth continued last year at a rapid pace, enabling us to take less finished goods from other countries and to furnish more. The relative cheapness of American products has given them pre-eminence, it is shown, and the remarkable growth of the foreign demand for our iron and steel is cited as a striking instance of what undercutting in prices will do.

The entrance of the South into the trade of the Orient is spoken of as a novel feature of our expansion. In the production and exportation of cotton the Southern states have made gigantic strides of late. The acquisition of the Hawaiian and Philippine Islands, it is declared, has converted our Pacific slope from a mere outpost of trade into a hive of commerce, while Cuba and Porto Rico offer the Southern states convenient stepping stones to Latin-American trade.

Taking the great geographical divisions in alphabetical order, it is stated that Africa is rapidly becoming a promising field for American enterprise, wherever artificial restrictions are not imposed. In the West there is an increasing demand for American goods. In East Africa it is noticeable that in Madagascar, where France imposes a tariff discriminating in favor of her own products, our cotton goods trade, once considerable, has been practically destroyed, whereas in Zanzibar, the Somali country and Abyssinia, where such restrictions do not exist, it continues to grow. The war in South Africa has deranged the trade, but a great increase in American trade is looked for when peace shall have been restored.

On our own continent we still control more than one-half of Canada's trade; with Mexico our trade relations are most satisfactory, and our goods appear to be making steady progress in Central America. In this connection attention is called to the increasing investment of German capital in Costa Rica, Guatemala and Nicaragua, estimated at $60,000,000.

As a matter of keen interest to the whole [illegible]

have [illegible] seriously [illegible]

any other nation, from the fact that the bulk of our exports had been disposed of in North China—the scene of most active disturbance. A decided increase of our exportation to Asiatic Russia has taken place and the winter of 1899-1900 witnessed an enormous import of American products into the Amur province. Japan is an important gateway for our Chinese trade. Our trade with that country itself is steadily growing. The fears of Japanese competition, which a few years ago caused some concern in the United States, have not been borne out, and it is stated that Japan may be able to compete with us at some points in the future, but her general development seems to mean increasing purchasing power and a larger consumption of our goods. Of the other Asiatic markets it may be noted that we are increasing our sales of iron and steel in British India; that Americans are doing much toward the development of Corea, especially as to the gold mines, and in Persia and Asiatic Turkey American goods are finding their way in spite of adverse conditions.

During the last decade our export trade with Australia has increased in value more than 100 per cent., and we now export to Australia six times as much as Germany does, and stand next to Great Britain in the supply of that commonwealth.

Of the European countries, in Great Britain our consular officers report the steady progress of American goods in popular favor. The extensive introduction of American machinery and tools into England and upon the Continent is cited to show that improved machinery, once regarded as the foe of labor, has proved itself the most trenchant weapon of American workingmen in the competition for foreign trade.

On the whole it would appear that nowhere does the United States appear to disadvantage in foreign trade. The bureau's statement closes with warm commendation of the zeal of our consular officers abroad in preparing and transmitting their reports.

AGRICULTURAL DEVELOPMENT.

The agricultural products of American farm lands have kept ahead of the increase in the number of people to be supported by them. There is a constant increase in the surplus of such products which is exported, yet the United States, in thirty years, shows an increase in population from the 38,000,000 people of 1870 to the 76,000,000 mark of the present year. In this same time the amount of cultivated and improved farm lands has also largely increased.

As the area of cultivated land grows, and as the population increases, the production of needed machinery for the best use and highest results to both becomes greater. Thus the perfection of farming method is seen in the great [illegible] States. There the modern [illegible] electricity serve [illegible] the plowing [illegible] telegraph wire in the [illegible]

ONE CITY'S TRADE.

Sioux Falls, South Dakota, U. S. A., is in what is known as the Far West. It is not the most prominent implement center, several cities largely exceeding it, yet the business in machinery and implements at that point is very large. The "Argus," one of its newspapers, states that year by year the increase of the machinery business in Sioux Falls has been a surprise, not alone to the citizen who is but casually interested, but also to the machine men themselves. But a few years ago the machine business of the vast territory of South Dakota, southern Minnesota and northwestern Iowa was largely handled from Omaha and Sioux City, but within the past ten years several machine houses have demonstrated that Sioux Falls offers very much superior advantages for the large distributing business necessary to cover the territory mentioned, and other firms have profited by their example to establish themselves here. Each year sees some new houses in the machine line added.

In speaking of the machinery business it is intended to include everything naturally handled by machine men, such as vehicles and binding twine, as well as harvesters and agricultural implements of all kinds. There are so many competing companies that it is impossible to get the actual figures, but from one who may be considered the best posted man on these matters in the city the following approximate figures were given, which are said to be conservative:

In wholesale firms alone there are twenty concerns which handle their goods from Sioux Falls. About half of these have actual houses in the city in charge of general agents, while the others distribute their goods through the several machine transfer houses and have managers and road men who cover the territory from Sioux Falls.

As careful an estimate as can be made places the total amount of business, outside of harvesting machines, for the past year at $1,500,000, while the business of the several harvester companies is estimated to be close to $1,000,000 of itself. It is therefore safe to say that the machinery and vehicle line [illegible] did a [illegible] business of $2,500,000. The indications for next year are for a still greater amount of business, as a very large transfer warehouse has just been completed and others are expected to be erected in the spring. Last year the transfer storage room was entirely inadequate to the needs of the business, and more room of the kind was [illegible] to meet the demands of [illegible] their goods in [illegible] The [illegible] employed by the machine interests of Sioux Falls would make a small army and it is increasing every year.

A NEW CATALOGUE.

The Lansing Wheelbarrow Co., Lansing, Mich., U. S. A., have recently issued a new [illegible] of their entire output, which includes wheelbarrows, warehouse trucks, field rollers, fence machines, wheels [illegible]

THE MAN BEHIND THE MACHINE.

The machine has no brains. The individual must always be considered in estimating the cost of labor. The man is a mighty factor in the world's industries, and the higher the man in intelligence the greater the capacity of the machinery controlled by him.

Comparing the American methods with those practiced in England, a writer in the "Ironmonger," of London, takes a bold position. He calls attention to the fact that America has received orders that should have been filled in England, and ascribes his reasons therefore as follows:

"Our daily papers never seem to tire of telling tales of our commercial decadence, and were it not that a powerful section of that press are known to harbor a leaning toward the sensational in journalism, we might all have fallen into a state of panic. But it is of no use denying the fact that orders have gone out of this country that should have stayed at home, that continental and other contracts which should have been secured by British firms have not been so secured, and that orders are at the present time leaving our own shores to pay for which British capital will be required later on. I should like to deal with this matter from a standpoint which seems to have received little attention so far. In the matter of competition generally, we are finding our American cousins, or shall we say brothers (for as a prominent American himself put it, they are but 'expanded Britishers'), very hard nuts to crack, but we cannot admit that the stock which gave to the world its Americans is exhausted. But the same American referred to above struck the key note of the situation when, after hearing a British crowd sing 'Britannia rules the waves!' he quietly remarked, 'Waal, I guess we don't want the waves—the ma-arkets are the thing.'

"Looking at American men and methods we find that individualism is a much more powerful factor there than here; in nearly all American concerns the individual is taught to consider that on his individual effort rests the question of the failure or success of the firm, whilst again, the American employer closely watches his individual men, ever fearful lest a man who has ten dollars' worth of common sense and ability in him shall be engaged upon an eight-dollar job. In this respect the British manufacturer falls short of his American prototype, and thereby both he and his employes are heavy losers. But America enjoys no monopoly of 'expanded Britishers'; the old country still contains men whose powers of expansion are only limited by the service they get from their employes. These men are ever anxious to put the ten-dollar man on to the ten-dollar job, but are the men always as anxious to get on to it? I am afraid not. The year that has passed has brought to light an ugly trait in the British mechanic's character which few knew he possessed. No battlefield success was too trivial but thousands of British workmen clamored for a holiday, whilst for the really important successes two or three days of idleness, and often dissipation, was the price exacted from employers whose hands were full of work which would have brought money to the firm and to the toiler. A spirit of restlessness seems to have crept into the factory and the workshop, and the workman, instead of endeavoring as a man to be the best in his field and to begrudge no reasonable effort to make his firm pre-eminent in its line, seems only to go through the day as if toil were a penance. The orator who declared that 'the man who loved his country the most truly was not the one who shouted Rule Britannia the loudest, but he who at his bench, machine or desk was always trying to fit himself for something better' gave utterance to a truth that should live in the mind of every man who has the commercial interests of his country at heart.

"Drink, gambling, abused unionism and a love of license have all done their little toward wrecking the harmony that should exist between master and man; each prefers to stand by and cackle of his independence instead of helping to wage what is after all the grandest and most honorable of all battles—that for our Empire's supremacy in the commercial world. For this masters and men are both wanted; masters considerate, tactful and generous, keen to detect and help forward honest worth; workers, earnest, steady, plodding and whole-souled in the interests of their employers; in each instance nothing more and nothing less than men—British men."

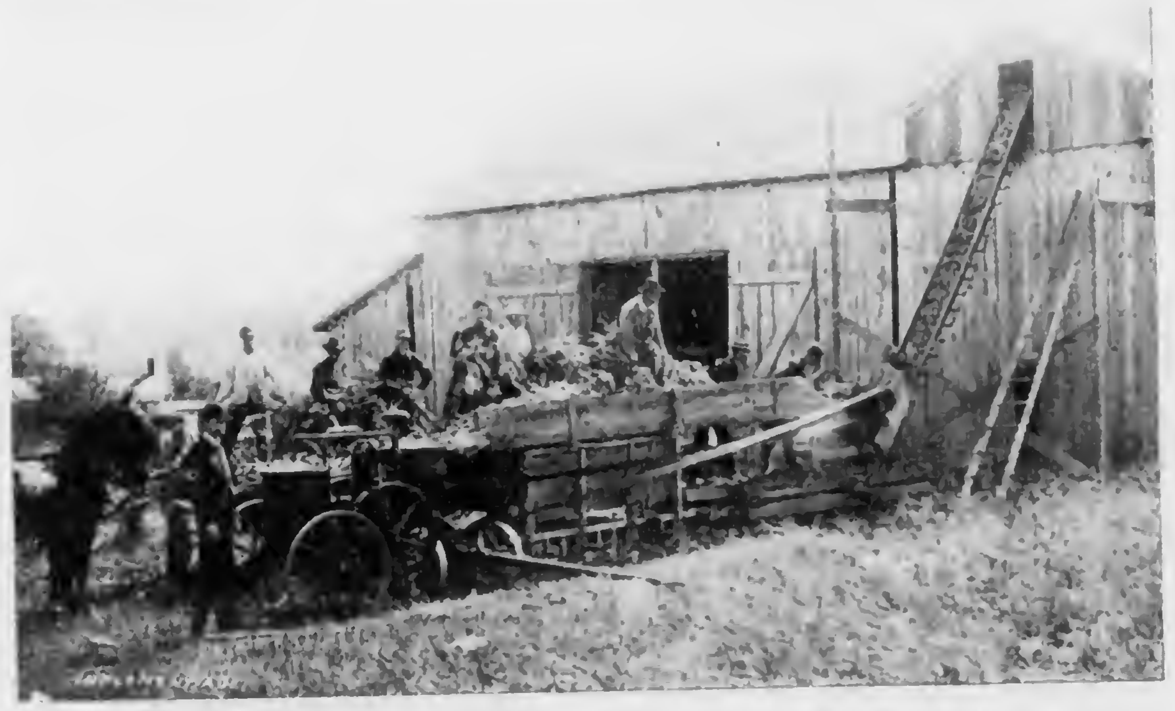
Individualism in America, according to the above, is a much more powerful factor than in England. The ablest men are employed in America to perform the best work, and more hours of labor are given for the wages received. In some European countries there are many holidays, and there is also a loss of time during working hours to go outside for meals, pleasure, rest, etc. The article above mentions drink, gambling and other causes for disturbing the harmony between employer and employe in England. The workman in the United States is not free from human temptations, but he must be at his post, receives but few holidays, must fully understand his calling and is paid good wages. When he fails to come up to the requirements demanded he must step aside for another.

In the American factories every workman performs a special part. The work is classified and the best man for a certain duty is selected. He is responsible for the work, and the greater his proficiency the higher his wages. The amount of work performed in American factories by each employe exceeds that done in European factories because no waste of material is permitted, the most approved machinery is utilized and system prevails in every department. Superintendents and foremen have their duties, but each man is given to understand that he is a part of the whole, and that his skill is more valuable than his capacity as a human mechanical agent.

These facts demonstrate that the factories of the United States make the highest grade of goods, that they can also make them more rapidly and at the lowest cost, as well as combine quality and efficiency. When the European dealers patronize American manufacturers they simply accept advantages which permit of larger profits and more satisfactory results.

Some American cities have implement and vehicle Boards of Trade.

A new invention in the United States is rubber spokes for wheels, which are said to render rubber tires unnecessary.



State of Illinois, U. S. A.—Gasoline engine operating a shredder for reducing corn stalks to food for stock.

Staat Illinois, Ver. Staaten.—Gasolin Motor, eine Futterschneidemaschine treibend, die Maisstengel zu Viehfutter zubereitet.

Etat d'Illinois, Etats-Unis.—Moteur à gazoline faisant marcher un hache paille réduisant des tiges de maïs en nourriture pour le bétail.

Estado de Illinois, E. U. de N. A.—Motor de gasolina moviendo una desfibradora para convertir los tallos de maíz en alimento para el ganado.

EXPORT IMPLEMENT AGE

FOR CIRCULATION IN FOREIGN COUNTRIES ONLY.

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Under no circumstances do we allow commissions to advertising agents.

The American dollar is equal to about five French francs. A kilogram is equal to about two and one-fifth pounds.

Never overlook sending full directions regarding the routes by which articles should be shipped. A few timely directions may save long and unnecessary delays.

Foreign merchants who write us for information regarding machines or implements should send drawings of the articles they desire, if possible, in order that we may be better enabled to oblige them.

American exporters have given particular attention to the best modes of packing. It would be well, however, for all who order American implements to give instructions as to how they prefer goods to be packed.

All American manufacturers who are exporting goods to foreign countries are careful to secure the cheapest freights. They are really compelled to do so in order to cause the customer as little expense as possible.

Dealers or merchants who buy American goods through the agency of export houses should also write the manufacturer at the same time, which will insure the receiving by the merchant of the goods he ordered instead of some other kind.

It is a total loss to purchase a heavy implement which may require two or three horses to draw it while the real work is done by an extra horse. Weight is costly. Steel gives lightness and strength. Invention has removed many of the undesirable parts of a machine.

The eminently practical heads of the big American farm machine-making plants do not consider any experiment is too risky or any expense too great in bringing out the goods that will sell best, last longest and serve farm workers most satisfactorily.

The continued development of the export trade of the United States is not in advance of the demand for American-made machinery. The increasing demand for farm land machinery from every country abroad keeps the export of same going faster and larger.

Those who follow American exports will note that a good many wheelbarrows are being brought from the United States. The American wheelbarrow is well made of wood that stands all sorts of climate, and all sorts of service. They are also made of iron and steel. It indicates that an enormous amount of wheelbarrow work is being done throughout the world. Some American wheelbarrow makers have recently worked in some improvements, which they consider gives them superiority.

Shipments of general merchandise to London and Liverpool, for the last week of December, taking it as a sample week, footed up $3,512,640, figures which will speak louder to European merchants than anything else as to the expanding exporting power of the United States. The fact demonstrates the wisdom of consulting the United States as to what can be bought to as good or to better advantage than elsewhere. The implement manufacturers of the United States are determined to excel if they have not already done so. They recognize the force they have to meet in England and Germany in skill, price and in commercial acuteness. The export trade of the United States will bear the careful scrutiny of every merchant, and especially every machinery and implement merchant, in the world.

The implement dealers of the United States are thoroughly organized in some of the states and hold annual conventions. They have committees to look after all grievances between dealers and manufacturers. The manufacturers are also organized, and in both organizations the membership is large. They send delegates to attend each other's conventions and they work harmoniously. Only the most reliable manufacturers can become members of the Manufacturers' National Association, and no illegitimate dealer is allowed to join the associations of the dealers. Both endeavor to protect the trade, at home and abroad, the result being that American implements must necessarily be of the highest quality.

The figures just published by the United States Government for the year 1900 show the total foreign trade to have been $2,307,102,970, exceeding by $232,667,589 that of 1899. The value of the exports were $1,478,050,854, or $202,582,883 more than in 1899. The imports were $829,052,116, or $30,084,706 in excess of 1899.

The balance of trade for 1900 was $648,998,738, an increase of $172,498,177 over 1899.

These figures carry their own lesson and point their own moral. The industrial development of the United States is in its infancy. By another year a large fleet of ocean-going steamers will have been added to our shipping facilities, and terminals at about twenty ports will be superb in equipment. The business men of the United States are preparing for the world's trade.

The talk about prejudice against, or friendship for, an article of trade because it was made in this or that country is less heard than a few years ago. There is a remarkable growth of cosmopolitanism. It is true the agriculturists of Germany seek to protect themselves by certain desired legislation against one or more outside countries, but this is not because of national prejudice. A broader comprehension as to what enlightened political economy requires is coming to the people of the world. The world is our market is the feeling of the merchant, manufacturer and farmer everywhere. No one can feel certain where his product will land after it leaves his hand. The laws of trade seizes it and it may find its way to the apparently inaccessible portions of the world.

The relation between beet sugar and agriculture in Europe is becoming very interesting. The ratio between the amount of machinery and implements needed in comparison with other agricultural products shows some very interesting results which implement importers in Europe are noting. The industry now in its infancy promises to become world-wide. One reason is that sugar cane cannot be cultivated beyond the fortieth parallel of latitude, while the beet prospers as high as the sixtieth parallel. The beet sugar production of Europe is 5,500,000 tons, while 73,000 tons is the present production in the United States. Russia leads Europe. Germany has 400 raw sugar works and 150 refineries. Cuba has 230 cane sugar factories. The cultivation of the sugar beet is now expanding remarkably fast, and calls for intensive cultivation which is yearly becoming a source of profit and agreeable employment to a large number of people.

NEW DEVICES.

Quickly done work is the life and need of modern farming. To keep up with the increased work there must be the greater power. To get this additional power requires adjusting of new devices to new improvements already gained. The use of greater power will of course cause a larger cultivation and development of the land. This, again, will give rise to a need for more parts and new machinery. All this will demand the actual service of trained men at the head of all the producing workshops. American manufacturing concerns provide for all these necessities as they arise, even forestalling them for the most part. The foreign dealer is the one most benefited by the exporting manufacturer, as the one who is entitled to the business income from the best and latest machines constructed to go abroad.

The merchants of the world will doubtless discover that they can do more business of an international character, and do it more easily and directly, as soon as the tariff treaties now being made between the leading countries are completed. The Government of the United States especially is industriously pushing the creation of new treaties based upon the newer necessities and capabilities in production and trade which call for larger foreign markets. Industrial progress in the United States, Great Britain, Germany, France, Austria and other countries requires that the commercial policy of each should be built upon a new or a broader foundation. The greatest measure under consideration is the Hay-Pauncefote treaty, which looks to the conditions under which the interests of Great Britain and the United States will be best subserved in opening up water communication between the Atlantic and Pacific Oceans. A string of minor measures with lesser governments are under consideration. The governments of the world are preparing for closer and larger dealings, for less exclusiveness, for more fraternity, for an enlargement of the world's trade and necessarily for the expansion of all manner of agricultural and industrial activity.

The American manufacturers have to struggle in their own country in order to keep to the front. They compete keenly with each other in the effort to supply 75,000,000 people, and their goods must be of the highest degree of excellence in order that they may hold their position in trade. If the Americans, who are well educated to the importance of the use of the best labor-saving machinery and tools, patronize a manufacturer it is strong evidence of the efficiency of his goods, for no class of persons will more quickly sacrifice a manufacturer, or refuse his goods if he fails to have them fully up to the required standard, than the American farmer.

The European farmer who patronizes American manufacturers can do so knowing that their goods are indorsed by the discriminating American farmers, and that the quality cannot be excelled or the prices unsatisfactory. In fact, American manufacturers are anxious to introduce their implements in order to convince dealers and farmers in foreign countries how important it is for farmers everywhere to use American makes. The farmers of all countries pay the taxes, receive but little encouragement and are forced to sell at prices which they do not control; but with the use of better implements, and a large saving in the item of labor entering into the cost of the production of crops, their advantages will be increased and their opportunities for profit improved.

AMERICAN WAGONS.

After all that has been said to the users of wagons throughout the world as to the merits of American wagons it might appear that there is nothing more to say that is worth saying. In one respect this is true, but it must not be inferred that improvement in wagon construction has come to a standstill. A study of recent wagon work in the leading shops in the United States by wagon experts shows that wagon makers are finding ways of doing and making better work. The stimulus to this improvement comes, primarily, from home necessities, and, secondarily, from the competition of wagon makers in other countries for the trade abroad. The theory of best wagon construction has, perhaps, been exhausted, but in the practice of wagon making there is room for fresh experience to suggest. The development of mining, of city commerce and of agriculture has created a demand for wagons of greater carrying capacity, without a material increase in weight or cost. The manner in which this has been done by American wagon makers deserves recognition. That recognition was not long in coming. The Government was not second in the matter. Its specifications are most exacting. It is comforting to the makers of these improved wagons that they have met every demand and expectation. The need of wagons which would carry enormous loads without straining, and without noticeable vibration, has been increasing year by year. The wagon makers have anticipated this very demand, and have in fact taught local users the advantage of putting stronger wagons behind their horses. The reports and testimonies of those who have used these wagons are deserving the serious attention of wagon buyers abroad.

AMERICA'S IRON AND STEEL.

The readers of this journal throughout the world can have no adequate conception of the relation of the United States to the outside nations, regarding the steel industry, unless they have made a special effort to acquaint themselves concerning it. As an evidence of the progress made in steel production, reference to American exports in 1880 shows their value was $14,716,524. Last year their value was $121,858,344. During this period imports of iron and steel fell off two-thirds. This result was reached by paying (taking one large steel works as an example) $4 per day for labor, including laborers and boys. The cost of steel making in the United States has been reduced below the cost in any and every other country in the world. The demand for steel in all probability will be doubled and quadrupled in a short time. The country which stands the best chance of supplying this demand, or a large part of it, is that country which can produce and deliver it at the lowest price to foreign consumers.

It may be a matter of surprise to merchants abroad to know that the best crude steel is produced and sold at American mills at one cent a pound and less. This is a combination and prosperity price. It has been made and sold for years at three-fourths of a cent per pound with profit.

The significance of this fact to the leaders of commercial and manufacturing enterprise throughout the world is that American steel will find its way into innumerable channels, and that with cheap steel a development will be stimulated and a momentum gathered which will demand a very great expansion of steel capacity in the United States.

Possessing the cheapest and admittedly the best steel in the world, it follows that its use in machinery of all kinds will cheapen the cost of machinery. The American manufacturers have not yet set their energies in the direction of the world's trade, but they are preparing to do so. Soon they will have cheap ocean freights, representatives in every market in the world and goods on display offered at the lowest prices that will admit of profit.

In short, a new power, factor, force or agency is in the field. A large industry has sprung up in America in the building of ships. The eyes of Americans are open to the possibilities of trade throughout the world. Preparations are making for a great surplus. On the other hand, the needs of the world are growing, and there may be no surplus.

In other words, the world, its industries, its commerce, its internal trade and the external relations of all its peoples are being reorganized and rearranged. Events are happening fast. Developments are volcanic. Human thought is electrical. Energy is centralizing with cyclonic force. Old conditions are passing. The dawn must be met and greeted by the world's leaders equipped for action.

HEAVY SHIPMENTS.

Some of the Cargoes of American Implements for Foreign Countries.

Russia, Greece, Algeria and other countries are buying American implements every day, and some of the largest shipments ever made may be mentioned. Up to the middle of February it is estimated that nearly 25,000 tons which constitutes over 800 carloads and means the employment of 35 special trains, are now waiting shipment in New York and Philadelphia, for nearly every part of the globe where grain is grown.

Three big liners of the Black Sea Line will be dispatched within the next 30 days with full cargoes of agricultural machinery for the south of Russia. Upward of 20,000 tons will be forwarded, valued at $1,500,000. This will be an event hitherto unknown in the annals of America's foreign commerce.

The Black Sea steamer "Costello" is due to sail for Novorssisk with the largest and most valuable cargo of machinery of any description that has ever been forwarded from this country to a foreign port. She will carry 7000 tons of reapers, mowers, harvesters, rakes, etc., worth $375,000.

The record shipment to date is that made by the steamer "Crewe," which sailed from Philadelphia for the Black Sea February of last year with 5385 tons of agricultural machinery valued at $230,000.

One of the most prominent export agents, representing a leading manufacturer of agricultural implements, recently stated that notwithstanding the political troubles in Finland, the bad state of finances in Germany, the stagnation of trade that England has suffered during the prolonged hostilities in South Africa and the over-supply of machinery that was shipped to France during the Exposition, present indications point to an increase of American shipments this year of at least 33 1-3 per cent. over those of 1900. As $16,000,000 worth was exported during the last year, we therefore look to ship more than $21,000,000 worth in 1901.

Wherever it is introduced American agricultural machinery rapidly supersedes everything turned out by our foreign competitors, because of its lightness coupled with strength and its up-to-date improvements.

The question of its price is not considered by the average foreign buyer, farming implements made in the United States readily commanding a higher figure than the products of some countries.

New markets, including Algeria, Greece and Siberia, are opening for American farming implements, with a demand away ahead of the supply.

The first direct shipment of 1000 tons will be made to Algeria from New York within the next ten days. Heretofore that colony has been content to draw its needed supply of agricultural machinery from France.

The coming month will witness the shipment of 1500 tons of farming implements to Greece. Siberia is developing into one of the most active buyers in this market, taking a monthly average of 1000 tons of agricultural machinery.

It is reported from authoritative sources that some European manufacturers of farming implements, seriously alarmed by the inroads of American trade, are re-equipping their plants with the latest American labor-saving devices operated by electricity. This is at least complimentary to American enterprise.

CHEAPER FREIGHTS.

The trade of the United States with particular European markets is to be greatly increased by the construction of some better method of reaching the coast from the interior. With a canal for barges from the great interior lakes to the Hudson river, thence to New York, a mighty advance is made. The old canal, so powerful a factor in its day and generation for the upbuilding of New York, is now insufficient. A $62,000,000 barge canal is to be voted upon next autumn, and about 1,000,000 votes will be cast for and against by the voters of the state of New York. It is a national measure, dependent upon the vote of the people of one state in forty-five states.

The necessity for better, larger and cheaper facilities is so urgent that it has resulted in the bringing forward of another measure, one looking to the construction of a freight railroad across the state of New York, built at a cost of $20,000 per mile, which, with all necessary equipment, would require an outlay of some $50,000,000. This road would probably be equipped with rails weighing 100 pounds to the yard, using locomotives of 100 tons weight, hauling cars of 100,000 pounds capacity.

Our friends in Europe and abroad can rely upon one thing, which is that the American people will have a cheaper, in fact the cheapest possible, outlet to the coast. It may be through the Welland Canal and down the St. Lawrence, or by a deep barge canal, or by a freight road, but the cheaper avenue is coming, and when it comes Europe and America will be drawn still closer together.

ADDITION TO THE PLANT OF JAMES LEFFEL & CO.

A large force of men began work recently on the new addition to the plant of James Leffel & Co., Springfield, Ohio, U. S. A. This firm gives employment to several hundred men, who for the past year have been working a great deal of time at night in order to fill the orders. The new building is to be of steel, the dimensions of which will be 80 x 225 feet. It is to be fitted up with electric traveling cranes and all the modern equipments required for the rapid handling of castings. Although the present plant is quite large, yet so wonderful has been the growth of its business during the last few years that many orders have been turned away.

FOREIGN SHIPMENT.

The Johnston Harvester Co., Batavia, N. Y., U. S. A., recently shipped a train of thirty-one cars of their machines on the Erie road for New York. From there they will be forwarded to Russia. The value of the machines is $90,000.

ILLUSTRATED CATALOGUES.

The Buffalo Pitts catalogue, with the great white buffalo on the front cover, is a fine work of art. The Buffalo Pitts Co. are located at Buffalo, N. Y., U. S. A., and are preparing for a display at the Pan-American Exposition They manufacture the Buffalo Pitts engines, threshers and attachments; also a full line of harrows, rakes, cultivators, rollers, etc.

The Plano Manufacturing Co., Chicago, Ill., U. S. A., have issued their 1901 descriptive catalogue, which is probably the most artistic and instructive book of harvester information ever issued by this company. The border features were designed especially, as well as were the wood engravings and half-tones which illustrate its pages. The fact that Plano sales have increased wonderfully during the past four years is good evidence that artistic advertising, and plenty of it, is a paying investment. Interested dealers can procure a copy of this work of art upon application to the company.

The McCormick Harvesting Machine Co., Chicago, U. S. A., have their catalogue and calendar ready for those who have not received them. They are sent free to dealers; and though they have been largely distributed, there are more for those who may have been overlooked

The Walter A. Wood M. and R. Machine Co., Hoosick Falls, N. Y., U. S. A., have issued their forty-ninth annual catalogue, which differs from anything of the kind heretofore issued. Being an elegant and artistic catalogue, its half-tone illustrations of the Wood harvesters and binders (all parts given in detail) should make it a valuable acquisition to every dealer. Their tubular steel mowers reapers, rakes and hay tedders are treated in like manner, the catalogue being complete. It will be sent free upon application.

The Hoosier Drill Co., Richmond, Ind., U. S. A., request dealers not to overlook their 1901 catalogue. The Hoosier grain drill is fully described therein, and, as it has a wide reputation, dealers will find it to their advantage to read this descriptive catalogue, which is sent free upon application.

LIST OF STEEL PRODUCTS.

The booklet containing the list of products of the American Steel and Wire Co., New York city, U. S. A., is comprehensive in detail only to the extent necessary to give a clear idea of what they manufacture. Many of their products cannot be briefly listed, but the pamphlet shows enough to indicate the general lines, among which are: Pig iron, ingots, billets, wire rods, steel plates and sheets, steel shapes and bars, steel hoops and bands, spring and tire steel, horseshoes and toe calks, cold drawn shafting, every grade of wire, standard wire nails, woven wire fencing, springs of every description, etc.

A complete description of the immense output of this company under one cover would hardly be necessary, so they have issued this compact catalogue, and where detail is lacking in any special article those interested may readily obtain the desired information by correspondence with either the New York city, U. S. A., or the London, England, offices.

THE AMERICAN CROPS.

What the United States Produced Last Year.

The statistician of the Agricultural Department has prepared an estimate of staple farm products in the United States in 1900. The reports received by the department show that the wheat crop amounted to 522,229,505 bushels (a bushel contains about 27 kilograms), the area actually harvested being 42,495,385 acres (about 2½ acres make a hectare), and the average yield per acre 12.29 bushels.

The maize crop of 1900 was one of the four largest ever gathered, while the oat crop has only once been exceeded. On the other hand, the barley and rye crops are the smallest, with one exception in each case, since 1887, the buckwheat crop is the smallest since 1883, and the hay crop the smallest, with one exception, since 1888.

The average prices of all the eight crops reported upon were higher on December 1 last than on December 1, 1899. The average farm price of wheat was 3.5 cents per bushel higher, with the result that a crop less by 25,000,000 bushels than that of preceding year was worth nearly $4,000,000 more. (A dollar is about five French francs or four English shillings.)

Maize was worth 5.4 cents per bushel more than at the corresponding date in 1899, and, estimated on this basis, the total crop, although but little larger than that of the preceding year, was worth $122,000,000 more. The average price of hay was $8.89 per ton, as compared with $7.27 per ton on December 1 of the preceding year, and accordingly a crop 6,500,000 tons less was worth $33,000,000 more.

The total value of the eight staple products of the farm—maize, hay, wheat, oats, potatoes, barley, rye, buckwheat, in regular order of value—was $1,801,406,582. The hay crop, second in value of all the products, was valued at $445,538,878.

PERUVIAN IMPORTS.

Peruvian merchants are to be congratulated for their recognition of the commercial advantages to be gained in dealing with the United States. Their imports from the United States, which in 1898 were $2,873,526, amounted, in 1899, to $5,146,531, or almost double. Peru's buying from the United States last year were one-half larger than in 1899. Ninety-five per cent. of the sugar produced there goes to the United States instead of to England, as formerly. These facts point to the operation of powerful influences at work on the Pacific coast of South America in favor of the United States and which will be strengthened when an isthmian canal is completed.

EXPORT SHIPMENTS.

The Warder, Bushnell & Glessner Co., Springfield, Ohio., U. S. A., made several very large export shipments of "Champion" binders and mowers recently to various important parts of the globe. Among them we notice a shipment of about 15 carloads to Philadelphia for Rotterdam, Holland, and another of several cars to New York to be forwarded to Havre, France. Recently this same firm forwarded a large shipment of "Champion" reapers to representatives in Turkey.

MEXICAN EXPOSITION.

The City of Mexico proposes to have a permanent exposition, at which the products of all countries can be exhibited. No country has made more rapid progress than Mexico within the past thirty years, and before one half of the present century passes she will be a powerful nation, with a population of 25,000,000. Already the City of Mexico ranks among the most progressive, and her merchants are enterprising. The permanent exposition is but a beginning. Mexico is stepping forward as a competitor in the world's trade as she is establishing great industries, and her people are enthusiastic in their determination to succeed.

MR. F. W. MINK.

Mr. F. W. Mink, whose portrait we present, is manager of the European agency of Adriance, Platt & Co., Poughkeepsie, N. Y., U. S. A., a position he has held since 1884. Though not an old man, Mr. Mink is nevertheless a veteran in the trade, having had experience in the business of selling harvesting machinery in Europe since 1876. He is considered one of the ablest managers in the implement trade. His headquarters are established at Hamburg, Germany, from which point he attends to a large territory over which his trade increases every year.

F. W. MINK
European Manager for Adriance, Platt & Co.,
Poughkeepsie, N. Y., U. S. A.

FOR FOREIGN PORTS.

The second trainload of a foreign consignment of agricultural implements left the factory of D. M. Osborne & Co., Auburn, N. Y., U. S. A., on February 11.

It took sixty cars to contain the order and these were divided into two special trains.

The trains went directly to New York city, where the goods were loaded on steamers bound for various foreign ports where the company has depots.

The A. C. Evans Manufacturing Co., Springfield, Ohio, U. S. A., recently made a large foreign shipment to Sweden by the way of New York city.

NEW AGENCY AT SAGINAW.

The Deering Harvester Co., Chicago, Ill., U. S. A., have recently opened up a general agency at Saginaw, Mich., U. S. A. Mr. C. A. Irvin is in charge, being admirably located in the building especially erected for the company. A large and growing trade in Deering products made the selection of Saginaw as a distributing point imperative.

STEEL FOR CALCUTTA.

The steamer "Caspian" sailed the last Saturday in December for Calcutta with $40,000 worth of manufactured steel, $11,000 worth of trolley poles and $15,000 worth of machinery. The only significant fact about this announcement is that it points to an enlargement of agriculture. This point is borne out by evidences from other quarters. India is getting ready to use more American made implements.

IMPLEMENTS TO HOLLAND.

The Rotterdam agricultural implement dealers received about February 1 from the steamer "Spaarndam," the largest single consignment of agricultural machinery which ever left the port of New York. It was valued at $30,000. The Hollanders appreciate American machinery, and the Rotterdam merchants are reaching far out into interior Germany for trade. On the same vessel there were $14,000 worth of American sewing machines.

EXPORTS TO ITALY.

The heavy shipments of electrical equipments and supplies and of railway equipments and supplies to Italy have indirectly assisted in the development of the implement trade between the United States and Italy. In other parts of the world a good trade has been built up by introducing American implements where they were previously, or very little, known. American electrical equipments are standard throughout the world, and so well American implements become standard as fast as they become known.

SHIPMENTS OF GRAIN DRILLS.

The McSherry Manufacturing Co., Middletown, Ohio, U. S. A., recently made a large shipment of their grain drills to South America, being the second shipment made by this company to the same consignee this year. The McSherry grain drills are growing in greater demand each year in the South American country.

F. PORTER THAYER.

Mr. F. Porter Thayer general agent of Aultman, Miller & Co., Akron, Ohio U. S. A., for Great Britain, died at Glasgow on January 27. His death occurred suddenly. Mr. Thayer was very popular in the United States, where he had hosts of friends, and was also well known in Europe. His death, coming so suddenly, was a shock to his numerous acquaintances in this country.

The implement and vehicle display at the Pan-American Exposition, which will be held at Buffalo, New York, U. S. A., will be a prominent feature

ENGLISH VIEWS.

Trade Matters Between Great Britain and the United States.

LONDON, ENGLAND, January 20, 1901.

To the Editor of the EXPORT IMPLEMENT AGE:

Our agricultural interests are aroused in the direction of protecting themselves at home and from foreign competition. The fact of increasing foreign competition is grudgingly admitted, but it is a factor in the situation, not only here in England, but in our colonies and in other countries.

The thing against which protection is being sought at home is the tendency towards combination in agricultural interests, which appears to be assuming threatening proportions. From the tenor of recent discussions in our agricultural associations, there is a feeling arising which may acquire sufficient momentum to resent the machinations of those who are seeking advantages through combinations.

One reason for this is said to be increasing use of American implements, which come up to our requirements, and are sold at reasonable prices. Mr. Wheeler, chairman of the Tenbury and District Agricultural Society, while he would like all implements used to be of British manufacture, yet believed the proper thing to do, if British prices are unfairly run up on them, was to buy American implements. In fact, Mr. Wheeler hopes foreign competition will be sufficient to break down any home combination, which sentiment is shared by the association over which he presides.

Other members of this association even went further and declared that many of the imported implements were better made and sold for lower prices than British makes. This recognition will be appreciated by American implement makers.

The English manufacturers recognize that Switzerland and America possess superior water powers, by the development of which the cost of manufacturing in many lines can be reduced, especially as long as the present high price of fuel is maintained. We are particularly apprehensive of American competition, where coal is cheap and water power is abundant, but sufficient unto the day is the evil thereof.

Another factor affecting the cost of labor in England is the housing problem. The fact is, there is less and less room in the larger cities for workmen to live. There is a pressure that is accumulating in the direction of forcing manufacturing plants out of the middle class and larger cities.

A recently returned traveling agent from South Africa adds to the already abundant testimony that South Africa, agriculturally, is a magnificent country, and is remarkably fertile in localities. The great obstacles to be overcome are locusts and scarcity of water.

Some of our thinkers and writers are questioning which is the more threatening to healthful industrial conditions, the trusts, as you have them in the States, or our limited liability companies, which, under loose management, have done so much harm. B.

Binder twine prices are watched closely in the United States. Much depends upon the crops, but dealers endeavor to get in their stocks early, if possible.

THE LOOMING AMERICAN FREIGHT WAR.

While the question of ship subsidy in the United States is receiving attention the manufacturers in other countries are beginning to fear America's supremacy of the ocean. The "British and South African Export Gazette," of London, in discussing the possible low freights from America, in referring to which, under the above caption, it says:

"The projected launching of a national service of steamers between the United States and South Africa, to which Col. J. G. Stowe made allusion in our last issue, will lack nothing of interest to the merchants and manufacturers of this country, if the methods followed by another great railway and shipping concern in America are even only approximately imitated. The latter, it seems, is prepared to transport from any inland town on its system and deliver at the warehouses of the British purchasers in London the first 250 tons of goods free, provided future business amounting to 1000 tons be guaranteed. Its terms for subsequent business are at the rate of 25s. per ton, which includes 86 miles of inland rail transport, all wharfage and other charges at the American port, sea freight and insurance, wharfage charges on this side and cartage to the customer's door. Without taking up unduly an alarmist attitude, there can be no doubt, from the outspoken utterances which have appeared in the American press since the publication of our last issue, that a great lowering of sea freight charges to South African ports in particular is contemplated by the promoters of the new shipping scheme to which the United States Consul-General first called attention in these columns. The object, of course, is to still further assist American firms to increase their hold upon one of our best markets, and that they will be helped in this direction by their railway companies is more than probable, as is evinced by the action of the existing railway and shipping concern to which we have made reference. As this is the case, we need to be under no illusion as to what is before us, and prompt steps should be taken to meet the contingency. The new steamers of the Union-Castle line will be required not a day too soon."

The United States manufacturers of farm implements are endeavoring to adopt the best methods to enable them to ship to foreign countries at the lowest cost for freight. The American railroads have largely been consolidated under one management, which gives the manufacturers better opportunities for arranging for the lowest railroad rates. American manufacturers complain that their export trade has grown so rapidly as to create a greater demand for ships than ever before, and the American Congress is considering the advisability of subsidizing ships as an encouragement to the shipping interests. Some opposition to this exists, however, as the United States shipyards are crowded with orders for vessels.

In the above extract it will be noticed that England is also making effort by having a new line of steamers to South Africa, but the United States will not suffer thereby, as any lowering of freights, in either country, will in the end increase trade with South Africa by cheapening the cost of articles to consumers.

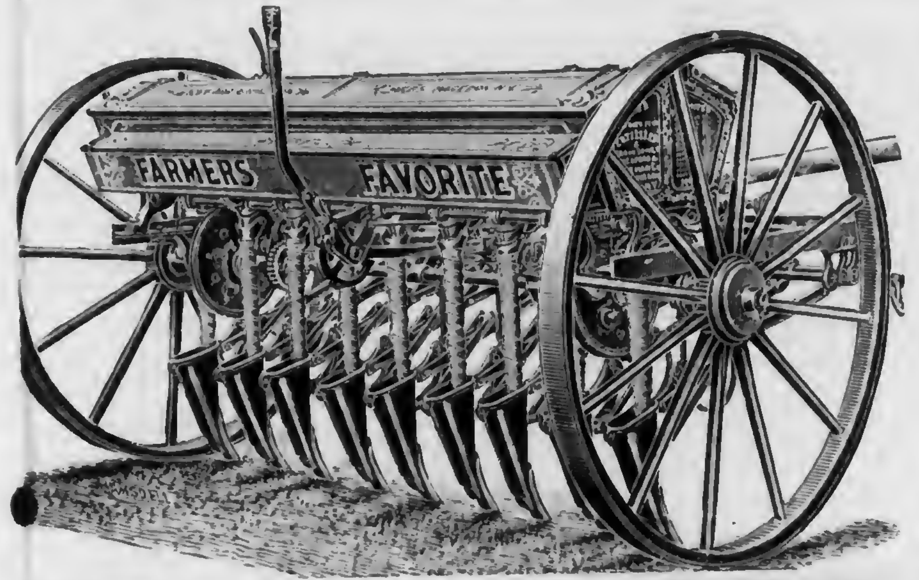
So perfect is the railway system in the United States that distance from the seaboard is now regarded as of little consequence. The American manufacturers have complete systems for shipping from their factories, and every effort is made to place implements in the hands of consumers at the lowest possible price in order that more goods may be consumed and the great army of buyers increased.

ILLEGITIMATE DEALERS.

In years past the complaints made were loud and frequent that there were too many dealers, in consequence of which numerous failures often occurred, and frequently failures of sound business firms. There is not, and never was, a law against an irresponsible, but unwisely ambitious man renting a store-room and hiring a partner to paint a sign "Implement Dealer." The competition of dealers who had to sell an implement before they could pay for it has helped to bring on many a panic. Men with capital have gone under with men who had none. The buyer was not supposed to know which dealer had capital and which had not. He simply looked at the implement and the make and the price, and probably also the terms of payment. At one time the country was overrun by dealers who could not deal had they been asked to pay for what they sold. Hence competition raged all the fiercer than if it had been limited to firms who started in with cash to pay for what they sold. The same trouble and the same conditions are liable to re-occur and with like results.

They are up against some such conditions now in England. Mr. R. A. Lister, president of the Four Counties Association, stated in a public meeting, in Gloucestershire, that since 1879 the retail agricultural implement business has been going from bad to worse. There was no country in the world, he said, where competition in retailing implements was so great as in Great Britain. Association movements rather depressed prices of implements in his experience. If by association the dealers could be tolerably certain of making a decent living failures would be fewer, and consequently the necessity among implement makers to raise prices to provide for bad debts would be less. The problem there, as here, is how to restrain competition, how to keep dealers from competing for trade who have no legitimate business to compete, to the detriment of the fair profits of others. Mr. Lister also claimed that the manufacturers in America sold direct from their supplies throughout the country, while in England implement agents usually carried on some other business.

In the United States the dealers are organized in several states and are forming a national association. The manufacturers have been organized for several years. So far the two associations have had no conflict, delegates being appointed from one to the other as representatives at the conventions.



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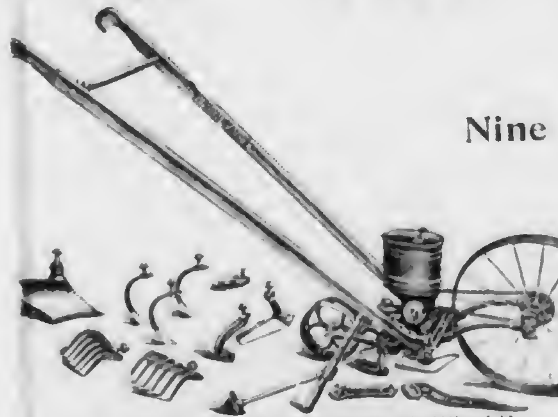

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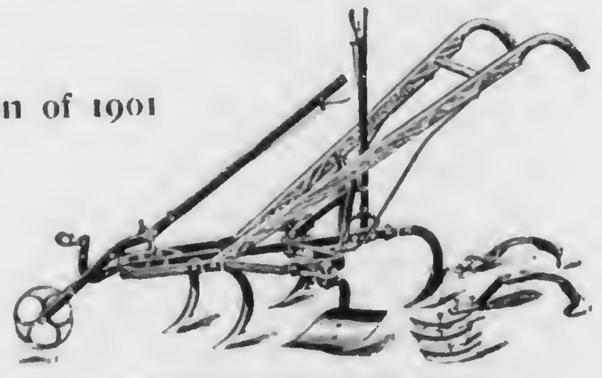

No. 6 "Iron Age" Combined Horse Hoe and Cultivator.

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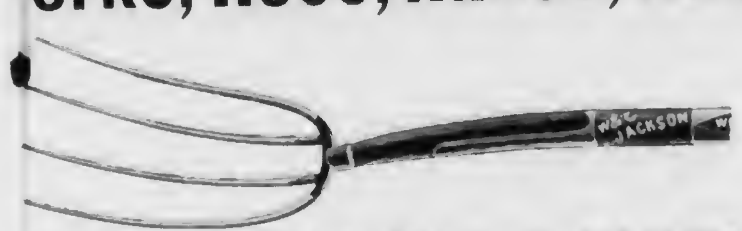

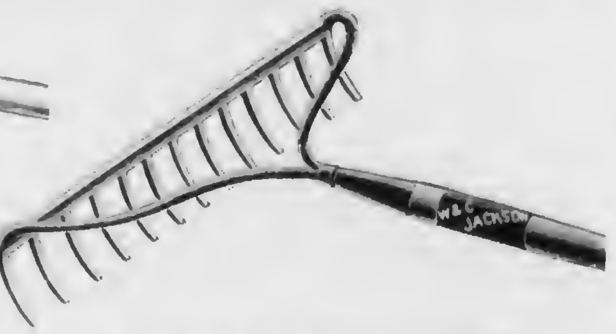

argest and Most Varied Assortment, and of Quality and Finish which have been recognized as STANDARD FOR OVER HALF A CENTURY.

VITHINGTON & COOLEY MFG. CO.,
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SEND FOR ILLUSTRATED CATALOG.
ESTABLISHED 1848.

PENNY POSTAGE.

Cheap postage has done more for trade, and brought the nations of the world closer together, than all other factors. Young and enterprising New Zealand has started a revolution in that direction which cannot fail to influence other countries. In reference to the matter the London "Commercial Intelligencer" says:

"On January 1 next the people of New Zealand will take the bold departure of establishing penny postal relations with the rest of mankind. A penny stamp will carry a New Zealand letter to any place in the world. There is to be no restriction to reciprocating colonies and countries. The cost of the move will be quite £80,000 for the first year, but the Government is confident that this will soon disappear. It is a bold step; and with such an example before them the people of Australia will surely feel constrained to take both the question of cheap postage within her own borders, to say nothing of imperial or universal penny postage, into consideration. Universal cheap postage is only a matter of time, and we congratulate the people of the 'Fortunate Isles' on taking the first step."

While the colony may incur an expense of £80,000 the first year (about $400,000), the loss will be more than regained by the people at large. A tax may be onerous, but when the result proves that it is really beneficial, the people will appreciate it. Some kinds of taxes are ruinous to the country and oppressive to the citizens, yet there is no expense for which so much is received as the amount paid by each individual as tax. The protection of one and all, the supply of water, light and heat, the clean streets and the general comfort of the individuals in communities are secured more easily and at less cost by taxation than through the efforts of each to provide without such co-operative effort.

Penny postage between all nations is not only possible, but would, in the end, prove less expensive than at present rates, for the reason that more mail matter would be sent and an increased business transacted. Penny postage will do more to bind treaties, promote reciprocal relations and abolish war than all other methods that can be conceived. It brings the people of all countries close together, obliterates distances and leads to universal language.

The peace and good will now existing between the United States, Canada and Mexico is due to the low and uniform postage between those countries. One rate carries a letter anywhere within their boundaries, and it is as convenient and cheap to send an order to one country as to either of the others.

New Zealand may yet lead all other countries in solving the problem of government. Governments are but organized individuals, and the object of government is the happiness of the people. Penny postage is the first step, for as soon as better communications between countries can exist the more rapidly will the barriers to trade and prosperity be overthrown. The nations of the world will at some time in the future give more attention to their trade relations, and enjoy the wealth wasted on armies and fleets, and the opening of the twentieth century, with the entering wedge of universal penny postage, augurs well for the future.

NEW ELECTRICAL SYSTEM.

The Milwaukee Harvester Co., Milwaukee, Wis., U. S. A., have made improvements which involve the use of an electrical power transmission system for the operation of isolated portions of the works from a central plant. The modern alternating current is used, not only for its simplicity, but the dust in the wood shops make the use of sparkless motors necessary. The improvements also include telephones which connect the main office with the different departments and residences of the officers.

While the insulating and wiring has been done with a view to avoid all possible danger from fire, an independent fire alarm system is provided having over 100 call stations. For additional safety automatic sprinklers are used.

With this complete system the management of even so large a plant is reduced to a minimum, enabling the company to keep pace with their ever increasing trade.

ELECTION OF OFFICERS.

The annual meeting of The Walter A. Wood Mowing and Reaping Machine Co. was held on February 7 at the company's office at Hoosick Falls, N. Y., U. S. A. Mr. Seymour Van Santvoord, of Troy, who is the president and treasurer of the company, read a gratifying report of the condition of the company and its trade. The stockholders elected these directors: Messrs. C. A. Cheney, Henry Burden, 2d, J. Wood Griswold, C. W. Tillinghast, Le Grand C. Tibbits, George A. Stone, Seymour Van Santvoord and Walter P. Warren. After the meeting of the stockholders a luncheon was served. The directors then met and elected the following officers: President and treasurer, Seymour Van Santvoord; first vice-president and secretary, Danforth Geer; second vice-president, Henry Burden, 2d; assistant treasurer, Harry W. Hudson; first auditor, C. A. Cheney; second auditor, Delmer Runkle.

NEW STEAMSHIP LINE.

Exporting interests in San Francisco note with great satisfaction the arrival there of the steamship "Hyades," the first of the new American-Hawaiian line from New York to Honolulu. A large number of steamships are building for the trade of this line between Puget Sound, San Francisco, Honolulu and New York. The "Alaskan" and "Arizonian," now building in San Francisco, are the largest ever built in the United States, capacity, 11,000 tons. This will be the longest steamship line in the world,—viz. 30,000 knots. It simply indicates what American enterprise is doing with reference to Pacific coast and Pacific Ocean trade. The same spirit of enterprise will ere long reach its long arms out in other directions.

AUSTRALIAN LETTER.

MELBOURNE, December 26, 1900.

The federation of the Australian colonie is an event that promises to be productive results of vast moment to the exporting in terests of the United States. Sentiment patriotism will likely be strained when th advantages of direct dealing with the Unite States come to be considered.

The federation is threatened with a fier contest between the free traders and the pr tectionists. Your interests naturally lie wit that party which proposes the freest possibl trade. The probabilities are that an averag 20 per cent. tariff will be agreed upo There will be no preferential tariff again American goods and in favor of those Great Britain. A revenue to provide th Government expenses is a necessity.

You Americans have secured a stron footing in the agricultural implement trad which nothing can disrupt. But American can depend upon it that local industries i implement making will be encouraged b tariffs. At present the duty on plows threshers, winnowers, harrows, chaff cutter and some other implements in Victoria, pa 15 per cent., as well as in South Australia while there is at present no duty on thes implements in New South Wales, Queensland and Westralia.

It is no secret, of course, that Americ implements are manufactured here. The re pairing business has become quite a prof able one. Those of us who are interested handling American implements have no fe but that the duty can be paid and a goo business done in implements from the Uni States. In fact, the farmers want certa makes because they know them. The freig question will naturally have something to with the amount of business we can and wi do. We understand that freight boats greater capacity and speed will soon be at ou service from San Francisco and San Dieg to say nothing of Portland, Ore.

Railroad developments are progress rapidly in Australia, and a very large amo of mileage will be laid in the next few yea thus greatly developing agricultural capab ities.

A Melbourne gentleman, Mr. A. J. Sage representing several American firms, is hav ing made a saddle for your Colonel Roos velt, which will represent Australian de ness and skill. It will have the constellati of the Southern Cross embossed on the swea flaps.

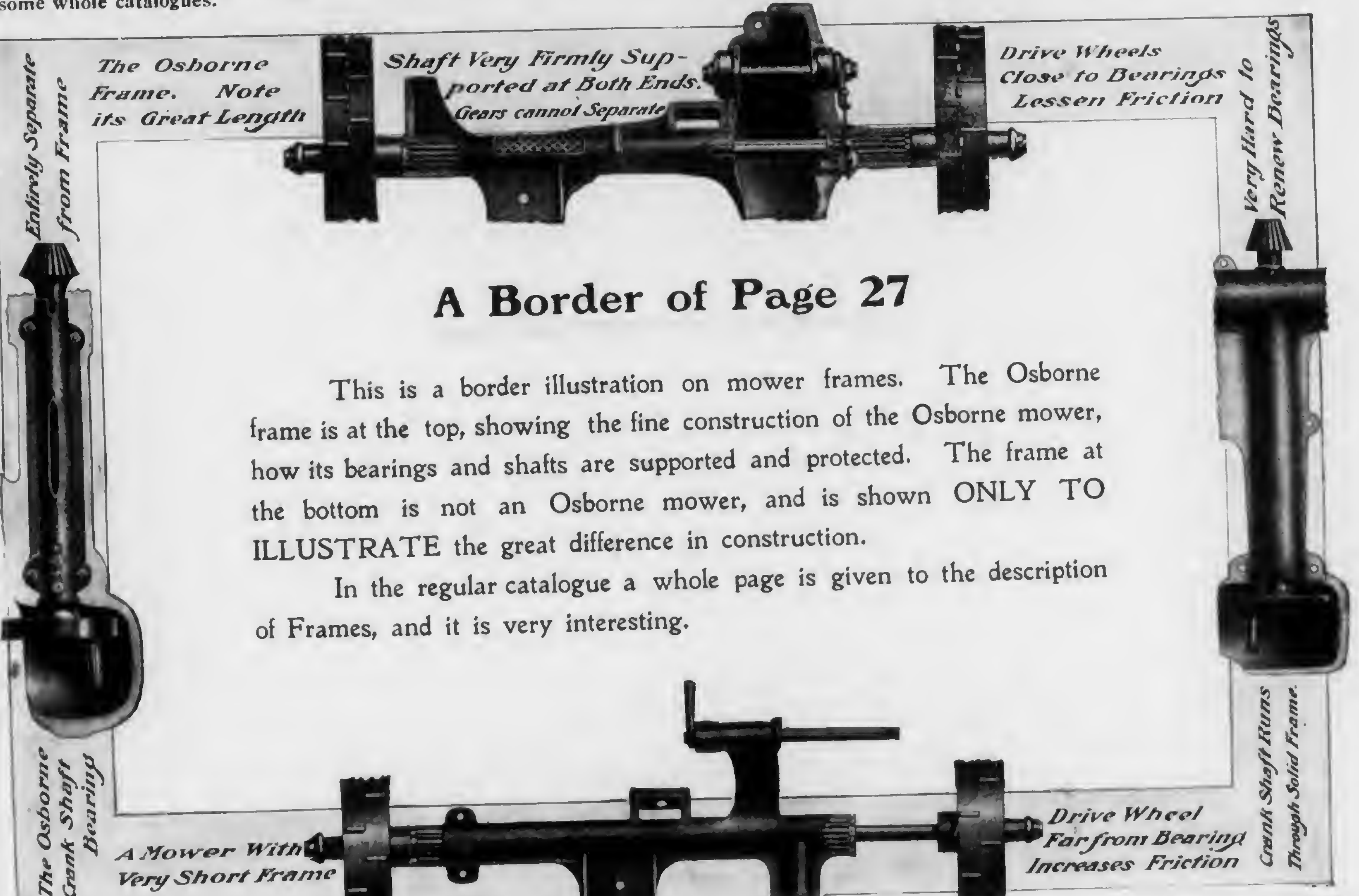
We are expecting a visit from Mr. J. I Spreckles, of San Francisco, who, it is under stood, is coming here to secure a subsidy fro our new Government. We fear Mr. Spreckle will have uphill work in getting our Govern ment to put money into a line that must b purely American throughout, though broad gauge business principles ought not stumble at this fact.

IMPLEMENT.

American implements are put on the for eign markets with the object of competin with those of other makes, not only on thei merits but with the view of inviting al farmers to give them practical tests in th fields. When an implement or machine used it should equally benefit the farme dealer and manufacturer.

A PAGE ON ADVERTISING

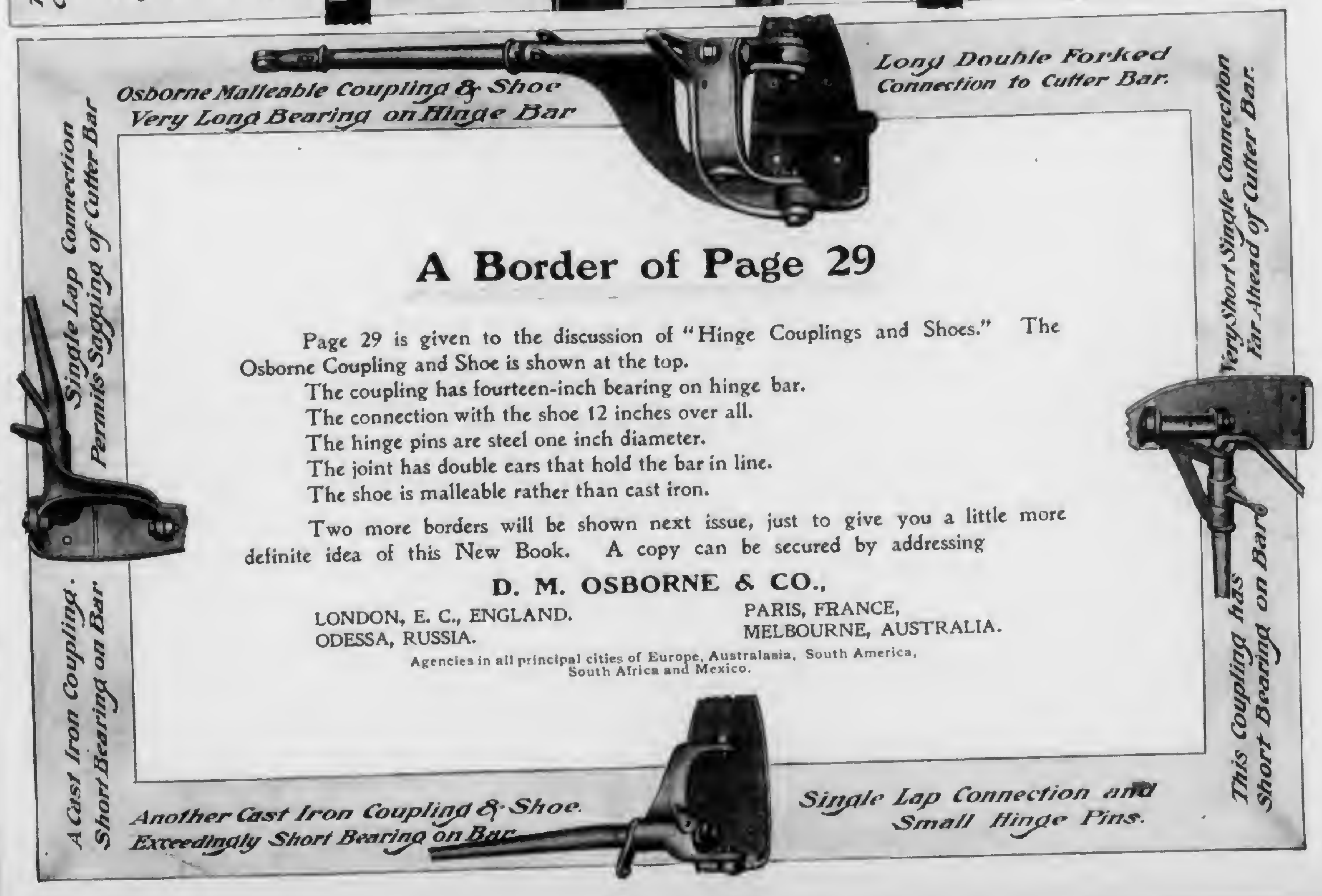
"Referring to the Dealers' Catalogue of D. M. Osborne & Co., Auburn, N. Y., U. S. A., of which so much has been said and written, the writer would state that every dealer should secure one of these books for his own information. Its statements and illustrations can be relied upon, and it will be a standard machine book for 1901. Really the borders of the pages of this book contain more real solid machine facts than some whole catalogues."


Entirely Separate from Frame
The Osborne Frame. Note its Great Length
Shaft Very Firmly Supported at Both Ends.
Gears cannot Separate
Drive Wheels Close to Bearings Lessen Friction
Very Hard to Renew Bearings
The Osborne Crank Shaft Bearings
A Mower With Very Short Frame
Drive Wheel Far from Bearings Increases Friction
Crank Shaft Runs Through Solid Frame.

A Border of Page 27

This is a border illustration on mower frames. The Osborne frame is at the top, showing the fine construction of the Osborne mower, how its bearings and shafts are supported and protected. The frame at the bottom is not an Osborne mower, and is shown ONLY TO ILLUSTRATE the great difference in construction.

In the regular catalogue a whole page is given to the description of Frames, and it is very interesting.


Osborne Malleable Coupling & Shoe Very Long Bearing on Hinge Bar
Long Double Forked Connection to Cutter Bar.
Single Lap Connection Permits Sagging of Cutter Bar
Very Short Single Connection Far Ahead of Cutter Bar
A Cast Iron Coupling. Short Bearing on Bar
This Coupling has Short Bearing on Bar
Another Cast Iron Coupling & Shoe. Exceedingly Short Bearing on Bar
Single Lap Connection and Small Hinge Pins.

A Border of Page 29

Page 29 is given to the discussion of "Hinge Couplings and Shoes." The Osborne Coupling and Shoe is shown at the top.

The coupling has fourteen-inch bearing on hinge bar.
The connection with the shoe 12 inches over all.
The hinge pins are steel one inch diameter.
The joint has double ears that hold the bar in line.
The shoe is malleable rather than cast iron.

Two more borders will be shown next issue, just to give you a little more definite idea of this New Book. A copy can be secured by addressing

D. M. OSBORNE & CO.,

LONDON, E. C., ENGLAND.
ODESSA, RUSSIA.
PARIS, FRANCE,
MELBOURNE, AUSTRALIA.

Agencies in all principal cities of Europe, Australasia, South America, South Africa and Mexico.

TIGHT BINDING TEXT CUT OFF

A COSMOPOLITAN PEOPLE.

The people of the United States differ from those of all other countries. Though the country was settled mostly by the English, and the English language is spoken, yet for over a century the United States offered homes to the people of all nations, until to-day the effects of immigration can be plainly seen. The London "Commercial Intelligencer" refers to the subject, sarcastically heading its article "Anglo-Saxons All."

"A curious light on the composition of the great nation across the Atlantic is afforded by official statistics published at Washington by the United States Immigration Bureau. Nearly half a million people from other parts of the world entered the United States during the year 1900 seeking permanent homes. The details of the immigration during the ten months ending with October last, just published, indicate that the immigration for the completed calendar year reached about 460,000. Of this number more than 100,000 came from Austria-Hungary, another 100,000 from Italy and nearly another 100,000 from Russia; while the United Kingdom furnished only 50,000, of which number 40,000 were from Ireland. So that of Englishmen, or Anglo-Saxons proper, something less than 10,000 emigrated to the States last year, for this number, while it takes no count of Irishmen, obviously includes Scotchmen and Welshmen, to say nothing of emigrants from other parts of the United Kingdom where Celtic blood is to be found. Is it any wonder that it is impossible to read a list of American names without being struck with the large proportion that to us sound foreign. The casualty lists in the Spanish-American war brought out this point very clearly. Even of the few men who accompanied Hobson in his gallant exploit at Santiago, the majority, if we remember correctly, had foreign names."

America is truly a country of all peoples and all religions. It has had the advantage of "new blood" year after year, and the newcomers have been absorbed into the whole, irrespective of nationality. It is possible that in the future there will be one language, which will be spoken in every country. The public schools of America are open to all, and education is to a certain extent compulsory. It would be a blessing if war ceased, national lines obliterated and trade relations more firmly bound countries in peace and prosperity.

A FLOATING EXPOSITION.

At a recent session of the United States National Board of Trade Mr. O. P. Austin, the Chief of the Treasury Bureau of Statistics, delivered a short address on a project which he had thought out of an around-the-world floating exposition by the merchants and manufacturers of the country, which should carry samples of American products and manufactures to the principal seaboard cities of the world for the purpose of giving the merchants and others of those countries and cities an opportunity to examine American goods and come in personal contact with American manufacturers and exporters. He suggested that half a dozen vessels be loaded with properly selected samples of American merchandise, which should be placed in position for exhibition on the vessels and sent from port to port along the eastern and western coasts of South America, thence across the Pacific, stopping en route at the Hawaiian Islands; thence to Japan, China, the Philippines, Australia and India; then along the eastern and western coasts of Africa; then through the Mediterranean, and thence to the cities of Western Europe, occupying two or three years' time on the trip and touching at all the trade centers to be reached by sea. By this process Mr. Austin thought merchants of all parts of the world would be given a better acquaintance with American products and American business methods, while at the same time the representatives of American interests accompanying the exhibits would come face to face with the merchants of the world and learn from them the obstacles which now place American exporters at a disadvantage, especially in South America, Asia, Oceanica and Africa, where success can only be obtained by a definite understanding of conditions and trade requirements. The fact that Congress has in the past appropriated over $10,000,000 for expositions would, Mr. Austin thought, justify the belief that if applied to by a properly organized exposition association of business men it might loan for this purpose a sufficient number of the Government transport vessels when the close of the war in the Philippines should terminate the service for which they were purchased.

Upon the conclusion of Mr. Austin's address it was voted that the subject be referred to a special committee consisting of the president and secretary of the National Board of Trade and one member each of the Philadelphia Museum, the Manufacturers' National Association and the United States Export Association to take the matter under consideration with a view to future action.

A CRITICISM.

Mr. F. S. Courtney, the consulting engineer of the Royal Agricultural Society of England, in his report to his society of the British agricultural exhibits at Paris, points out in rather severe terms that his countrymen are badly outdistanced by the American manufacturers of harvesting machinery. In plows the British display was pronounced inadequate. Mr. Courtney gives great credit to Canada for her progress in manufacturing agricultural machinery, especially in harvesting machinery, plows, cultivators, drills and haymakers. This superiority of Canada is, of course, due to the stimulus and competition of the United States.

The same gentleman, in commenting on the United States agricultural exhibit, said it was disappointing, not in the character of goods shown, but in the meagerness of the exhibit, the display being confined to mowing and reaping machines, horse rakes and plows. No engines or threshing machines, he says, and very few miscellaneous instruments were shown. He speaks, however, of the phenomenal sale of corn huskers in America.

The fact of the matter is that the American manufacturers were, and still are, so crowded with pressing orders for implements that their interest in the exhibition was lessened. The better way for European dealers to do is to possess themselves of a fair exhibit of American implements and then sell by sample.

THE CALENDAR YEAR.

The commercial record of the United in the calendar year 1900 will surpass any preceding year both in exports and excess of exports over imports, or "fav balance of trade," as this excess is u termed. The imports will be slightly those of one or two preceding years, when considered in their relation to po tion show a smaller importation for each i dividual than at almost any other peri many years. Basing the estimate for the ye upon the eleven months' actual figures a ready received by the Treasury Bureau Statistics, it seems probable that the expor of the calendar year 1900 will reach abou $1,470,000,000 and the imports $825,00 making the excess of exports over import favorable balance of trade, $645,000,000, a greater by $25,000,000 than that of any pre ing year.

Considering the exports alone, it may said that for the calendar year 1900 they w be double those of the calendar year 188 three times those of 1872, four times those 1869 and five times as much as in 1860. the import side the figures are less imposing They will aggregate for the year about $825 000,000, against $840,000,000 in the ca year 1892, when they reached the high-wat mark of the century's imports.

Considering the commerce from the pe capita standpoint, the contrast between th import and export figures is even more phe nomenal. Following the records of our com merce back to 1870, it is found that the im ports, when considered in the light of actual population, have decreased rather tha increased, while the per capita of exports ha enormously increased. In 1870 the popula tion was 38,558,371 and the imports $4 132,058, an average per capita of $11.90. 1880 and 1890 the per capita was a little a $13; in 1895 it had fallen to $11.47, an 1900 will be about $10.90. This show slight decrease per capita, comparing with 1870, and a material decrease compa 1900 with 1880 or 1890. On the export the increase is even more striking. In 1 the exports per capita amounted to $10.4 1885, to $12.26; in 1890, to $13.69, and in will be about $19.42. Thus the imports sh since 1870 a slight reduction per capita, w the exports have almost doubled per ca during the same period.

Considering the question of excess of ex ports over imports, or favorable balance trade, from the per capita standpoint, the de velopment is startling. In 1870 imports ex ceeded exports by $57,546,048, and the exce of imports over exports amounted to $1 per capita. By 1875 the balance had turn in our favor, but amounted to only 17 cen per capita. By 1885 it amounted to $1.79 pe capita, and in 1900 will amount to about $8.5 per capita. Thus in the thirty years the ba ance of trade has gone from a minus quantity of $1.50 per capita to a plus quantity of $8.5 per capita.

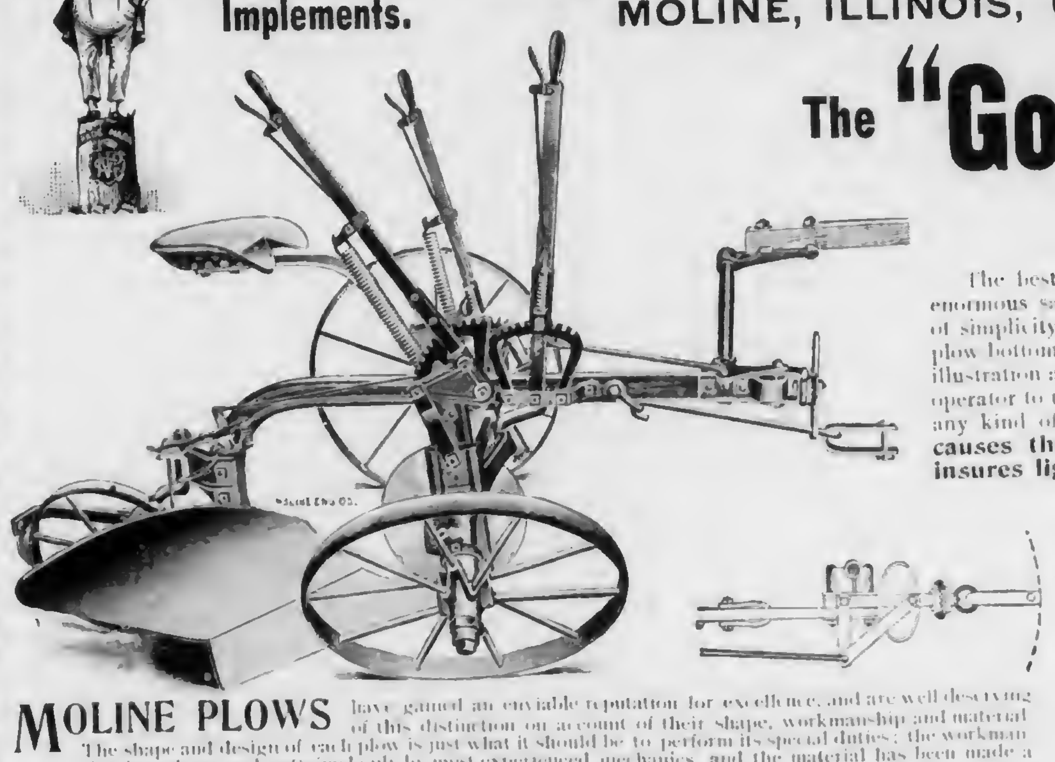
Railroads now extend from the leading cities of the United States to the City Mexico. Canada is also closely connected with the United States by railroads. It ma perhaps, surprise our European readers learn that Mexico, Canada and the Unit States have the same rates of postage.

Manufacturers of the Famous "Moline Plows" and "Flying Dutchman" Farm Implements.

MOLINE PLOW CO.

MOLINE, ILLINOIS, U. S. A.

WALKING AND RIDING PLOWS,
PIPE LEVER HARROWS
AND DISC HARROWS.
CORN DRILLS AND PLANTERS.
CORN CULTIVATORS.
SUGAR PLOWS AND CULTIVATORS.
BEET SEEDERS. CULTIVATORS
AND HARVESTERS.



The "Good Enough" Sulky Plow.

("Bastante Bueno")

The best evidence of the value of this plow lies in its great popularity and its enormous sales in the United States and many foreign countries. It is a model of simplicity in design and construction, and can be equipped with any size of plow bottom desired. It is fitted with the new style landing gauge shown in the illustration and detail cut. The great advantage of this device is that it enables the operator to regulate the "landing" of the plow with two, three or four horses in any kind of ground without leaving his seat. **This means of "landing" causes the plow to always travel in the direct line of draft, and insures lighter draft.**

Correspondence from agriculturists and dealers in any part of the world cheerfully and promptly attended to.

We issue Catalogues and Circulars in the English and Spanish languages describing our unrivaled line of Walking and Riding Plows, Harrows, Drills, Cultivators, Etc.

MOLINE PLOWS have gained an enviable reputation for excellence, and are well deserving of this distinction on account of their shape, workmanship and material. The shape and design of each plow is just what it should be to perform its special duties; the workmanship is such as can be attained only by most experienced mechanics, and the material has been made a special study, so that these plows stand as models of excellence.

The above cut shows the U. S. Coffee Huller, Manufactured by the Salem Iron Works, Salem, N. C., U. S. A.

Salem Iron Works Salem, N. C., U.S.A.

MANUFACTURERS of

Steam Engines, Saw Mills, Wood Planers, Railroad Cross-Tie Machines, Coffee Hullers, Pulpers, Washers, Dryers, Polishers, Centrifugals, etc.

Complete equipments furnished for Saw Mills and Woodworking Establishments or plants for handling the Coffee Crop.

Estimates furnished on application. Parties interested should state explicitly what they want.

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The Greatest Honor

of the Paris Exposition
Year — was the
Grand Gold Medal
and 200 Francs
(First Prize)
Awarded to the

McCORMICK BINDER

in Competitive
Field Trial
with the World
— Open to all
Comers — held
at Coulommiers,
France, July 19, 1900.

This is the Honor

in which ALL Farmers
— are interested
Who is Victor
in the Harvest
Field? There
lies the Honor
in the Farmers'
— Opinion

The Wheat Field
at Coulommiers
was very like
a Dakota scene
only with a heavier crop — In fact
the heaviest crop
in Europe. The
Wheat had to be
cut within an inch
of the ground.

McCORMICK

HARVESTING MACHINE CO.
CHICAGO

TIGHT BINDING TEXT CUT OFF

WAGONS AND CARRIAGES.

The retail vehicle and harness business of the United States for the year 1900 has been a most satisfactory one in every respect. According to the views of a leading manufacturer in the Chicago "Record," it may be stated that at the commencement of the year manufacturers in the various lines of accessory trades were unable to produce their products in adequate quantities promptly to fill orders from their customers, notwithstanding the high cost of all material. This, in a measure, acted to the detriment of retailers, for they could not obtain the variety of styles and quantity desired for the opening of the spring and summer season until so late as seriously to affect the volume of sales.

Taken in its entirety, the vehicle industry presents a barometer of trade which may be safely relied upon to feel immediately for good or bad the effects of a change in the condition of the people. A temporary rise in the prices of these commodities, resulting from a healthy trade, does not diminish their sale, but only tends to increase an already large business. A local disturbance of business, however, while acting as a deterrent in the launching of new enterprises, also causes the merchant to retrench, and in no other line is this manifested so quickly as in the cessation of the sale of pleasure and business vehicles. Still, such a condition does not affect the sales to out-of-town buyers of pleasure vehicles, which item, strange to say, shows a larger increase of sales for the year ending than any previous year of our business career

BANKING FACILITIES ABROAD.

Some recent developments in the agricultural implement trade abroad are being very closely watched by leading American implement manufacturers. One of these is the growing demand from agents in Europe for American implements who heretofore have been looking largely to England for what they could sell. Another is a more liberal and practical system of transmitting money from remote European centers and agricultural localities to the United States. These two factors or developments mean a great deal to the implement interests of the United States. Anything which smooths the way for more intimate commercial relations, or for easier financial intercourse, naturally works to the advantage of both buyers abroad and makers in the United States. The progress made during the past year has not been great but there are strong financial interests at work to open up financial facilities, that will make direct dealing easy. This is not only true with reference to Europe, but also with South America. One bank is now being created which will have strong international connections, and through which those who handle United States products can receive payment for goods without the circumlocution that has heretofore prevailed. This extension of facilities for banking will be continued until all parts of the world will be brought into financial harmony.

No more important step than this has been taken for fifty years. The beneficial influences will be felt before they will be realized. The business interests do not, as yet, realize what this spread of banking facilities throughout the world means. The financiers of each nation have been studying their own separate interests. Great Britain has been looking after her colonies and dependencies, but all the outside world that did business with her colonies has been obliged to use English channels, with London as a clearing-house. Latterly, Germany has caught the idea of the importance of banking facilities, especially since she has invested some $800,000,000 in foreign countries, and now comes America, or rather the United States, to follow England and Germany in the establishment of banking aids to the development of business. Only the preliminary efforts are now being made, but the grand work will be prosecuted until American manufacturers will be able to sell and get their money for any thing for which they find an export market.

GOLD PER CAPITA.

Manufacturers all over the United States can recall the disasters which have periodically crushed enterprise and spread bankruptcy because of lack of money with which to transact business, or, speaking with exactness, because of the difficulty of getting the use of it in critical times when confidence was dissipated.

Let us take a look over the field to-day as against twenty-five years ago. Then, $4,000,000,000 in money answered the world's requirements. To-day the figures stand at $11,600,000,000, nearly three times as much. Of this, $4,841,000,000 was gold, $3,818,900 silver and $2,960,100 uncovered paper. The per capita circulation is as follows:

	Gold.	Silver.	Paper
United States	$13.37	$8.43	$4.41
Great Britain	11.96	2.75	2.75
France	21.05	10.94	5.04
Germany	13.35	3.98	3.32
Netherlands	5.39	10.47	8.14
Russia	6.05	.79	....
South American States	1.88	.02	30.50
Spain	4.36	13.77	8.89
Mexico	.68	8.41	4.32

Taking all countries in the world which have money, the average gold per capita is $3.66, silver $2.89, paper $2.24. The United States per capita circulation is $26.21; France, $37.03; South Africa, $27.63, and Australia $29.93. This country, with its greater necessities, can stand quite a greater increase in circulation than it has.

A FRANK ADMISSION.

The "Times'" Vienna correspondent says: Under the title "European Economical Alliance," Paul Leroy Beaulieu, in the "Neues-weiner Tageblatt," after reciting America's immense resources and growing population, says: "They may henceforth be regarded as the first industrial nation, and their superiority will become strikingly evident year by year. The United States will, moreover, soon have a considerable mercantile marine. Americans are already accustomed to regard Europeans, more particularly continentals, in about the same light as Orientals, who vegetate in dreams of the past." He points out that European states individually are comparatively restricted as to markets, and cannot carry a division of labor to the utmost limits, and he suggests an economical alliance and the regulation of tariffs by a permanent European commission. This commercial co-operation, he thinks, might lead to a gradual reduction of armament.

IMPLEMENTS FOR FRUIT GROWING.

European agriculturists who are interested especially in those fruits which are chiefly canned for commercial purposes would do well to note what the California horticulturists are doing and propose to do. In the first place, they conduct operations by the aid of every implement and mechanical device that will increase product and lessen cost. By these means they secure large crops, which demand an export trade to absorb. European competitors may feel safe against California horticultural enterprise, but it may pay to watch. The latest move is to organize the fruit growers and dealers. The next arrangement is to dry all fruit that does not bring a fixed price. The last step is to prod the railroads into putting on fast freight lines that will deliver carloads from the Pacific coast to the Atlantic coast in eight days. Now, if California green or dried fruit, produced by the most perfect system of labor-saving appliances, can be delivered at New York eight days after starting, what inherent difficulties are there in the way of some of these products reaching European centers in ten or twelve days more, say three weeks from the orchard or vineyard? The moral is that if European methods of horticulture can be improved by more progressive labor-saving devices, it should be done before the California trade-hunting wolf pokes its nose in at the door of the European producer. Protection is afforded by using the same implements employed by the California growers.

CHANGES FROM THE PAST.

Dynasties have come and gone for countless ages; nations rise, flourish and disappear; warriors rise and cover the earth with their bloody pathways; the generations come and go in endless procession, but the farmer farms as did his fathers, back, back into the remotest past, with no thought of change.

When the "Mayflower" crossed the Atlantic a seed was planted that contained within it a germ that would produce in time the greatest of all revolutions, a revolution to which those of Genghis Khan and Alexander and Cæsar were as but a passing breath, the revolution that had for its object the cultivation of the soil by something else than a hoe or a forked stick. Eternity has drawn only a breath or two since that germ was planted on a bleak New England coast, and a whole nation has arisen animated by but one thought, to use the hidden power of God to get food and clothing and comfort.

America, or rather the United States, has aroused the farmers of the world to revolution; not of dynasties, not of blood, not of war's passions, but a revolution which means the dominion of man over the earth through the cultivation of the soil by enlightened methods, which will bring plenty, stimulate the energies of the mind, expand the capabilities of the soul and arouse the latent capacities that the manhood never yet uncovered may be uncovered, and that the human energies may be harnessed to achieve the uplifting of humanity into a real Christian civilization which kings cannot crush or tyrants of bloodiest hue even tarnish.

EXPORT IMPLEMENT AGE

NUR FÜR'S AUSLAND BESTIMMT.

Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

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Für ein Jahr, portofrei - - - - - - Mk. 4.25

Gelder können per Tratte auf New York oder durch internationale Postanweisung übersandt werden.

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Code für Telegramme: Lieber.

Adresse für Kabeldepeschen: "Nolanpub." Verlagsrecht der Nolan Publishing Co., 1899.

Band III. Philadelphia, Vereinigte Staaten, März, 1901. No. 6

Der amerikanische Dollar hat einen Wert von ungefähr vier Mark. Ein Kilogramm kommt etwa zwei und ein Fünftel Pfund gleich.

Händler im Auslande, die sich um Auskunft über Maschinen oder Geräte an uns wenden, sollten, wenn möglich, Zeichnungen der gewünschten Artikel beischliessen, damit wir ihnen nach besten Kräften behilflich sein können.

Die amerikanischen Fabrikanten, die nach fremden Ländern exportiren, scheuen keine Mühe, sich die billigsten Frachtraten zu sichern. Sie sind hierzu in der That gezwungen, um ihren Kunden möglichst wenig Kosten zu verursachen.

Amerikanische Exporteure lenken ihre Aufmerksamkeit den besten Verpackungsarten zu. Nichtsdestoweniger empfiehlt es sich immer, beim Bezuge von amerikanischen Geräte anzugeben, welche Art Verpackung man vorzugsweise wünscht.

Die ausserordentlich praktischen Leiter der grossen amerikanischen Maschinenfabriken erachten keinen Versuch als zu gewagt und keine Ausgabe für zu gross, wenn es sich um Herstellung solcher Fabrikate handelt, die rasch verkäuflich und dauerhaft sind und den Feldarbeitern gute Dienste leisten.

Es ist durchaus unvorteilhaft, schwere Maschinen anzuschaffen, die zwei oder drei Pferde zum Zug benötigen, während die eigentliche Arbeit von einem weiteren Pferd geleistet wird. Gewicht verteuert. Stahl verleiht Leichtigkeit und Stärke. Neue Erfindungen haben viele lästige Bestandteile von Maschinen beseitigt.

Händler oder Kaufleute, die amerikanische Waren durch Vermittelung von Exportfirmen beziehen, thun stets gut daran, beim Erteilen ihrer Aufträge gleichzeitig auch die betreffenden Fabrikanten direkt zu benachrichtigen, um sicher zu gehen, dass sie auch wirklich die von ihnen bestellten Waren und keine anderen empfangen werden.

Man unterlasse es nie, genaue Anweisungen zu geben, auf welcher Route die bestellten Artikel zu Versand gebracht werden sollen. Rechtzeitig gemachte, diesbezügliche Angaben beugen oft langwierigen und unnötigen Verzögerungen vor.

Ausser zum Vermahlen des Weizens sollte der Landwirt den Müller überhaupt nicht in Anspruch nehmen. Schrot- oder Futtermühlen, wie sie gegenwärtig in den Vereinigten Staaten von Nord-Amerika konstruirt werden, mahlen alle Getreidearten fein und rasch.

Das stetige Anwachsen des Ausfuhrhandels der Vereinigten Staaten von Nord-Amerika ist keineswegs stärker als die Nachfrage nach Maschinen amerikanischer Provenienz. Die gesteigerte Nachfrage nach landwirtschaftlichen Maschinen, die sich in allen Ländern der Welt kundgiebt, macht das Exportgeschäft immer lebhafter und treibt es auf immer grössere Höhe.

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Die in der letzten Dezemberwoche nach London und Liverpool abgegangenen Warensendungen aller Art bewerten sich auf 3,512,640 Dollar. Nimmt man den Ausfuhrbetrag jener Woche als Norm an, so müssen diese Zahlen für die europäische Geschäftswelt von grösserer Beredtsamkeit sein, als alle Betrachtungen über die mächtige Entwikkelung des Exporthandels der Vereinigten Staaten je sein konnten. Der thatsächliche Sachbestand weist darauf hin, wie sehr es am Platze ist, sich in den Vereinigten Staaten von Nord-Amerika darnach umzuthun, was man von da ebenso billig oder noch billiger als von anderwärts beziehen kann. Die Maschinenbauer und Gerätefabrikanten der Vereinigten Staaten sind entschlossen, alle anderen zu übertreffen, wofern sie es nicht schon gethan haben. Sie erkennen immer mehr an, dass sie in England und Deutschland in Bezug auf Geschicklichkeit, Herstellungspreis und scharfsinnige Geschäftsgebahrung mächtige Mitbewerber besitzen. Der Ausfuhrhandel der Vereinigten Staaten von Nord-Amerika braucht auch die allereingehendste Prüfung seines Geschäftsverfahrens nicht zu scheuen, besonders was die Maschinen- und Gerätebranche anbetrifft.

Wer dem amerikanischen Ausfuhrhandel mit Aufmerksamkeit folgt, kann nicht umhin, wahrzunehmen, dass Schubkarren von den Vereinigten Staaten von Nord-Amerika in bedeutender Menge exportirt werden. Der amerikanische Schubkarren ist aus Holz hergestellt, das allen klimatischen Einflüssen widersteht; er ist von guter Bauart und zu allen Zwecken geeignet. Es werden aber auch eiserne und stählerne Schubkarren hier angefertigt. Die grosse Nachfrage beweist, dass auf der ganzen Welt enorme Erdarbeiten durchgeführt werden, die Schubkarren nötig machen. Einige amerikanische Fabrikanten dieses Artikels haben in jüngster Zeit Verbesserungen angebracht, die ihren Fabrikaten vor anderen den Vorrang sichern.

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Die Beziehungen zwischen der Rübenzuckerindustrie und der Landwirtschaft werden in Europa immer interessanter. Die Zahl der Maschinen die zu ersterer benötigt wird, im Vergleich zur Anzahl von Maschinen und Apparaten, die zu anderen landwirtschaftlichen Produkten benutzt werden, weist sehr interessante Vergleichspunkte auf, die bereits die Beachtung europäischer Importeure erweckt haben. Die noch in den ersten Stadien befindliche Zuckerrübenindustrie verspricht, sich bald über die ganze Welt zu verbreiten. Ein Grund hiervon ist, dass das Zuckerrohr nördlich vom vierzigsten Breitengrade nicht mehr ertragsfähig ist, während die Zuckerrübe noch im sechzigsten Grad nördlicher Breite gedeiht. Die Rübenzuckerproduktion Europas beläuft sich auf 5,500,000 Tonnen, während sie gegenwärtig in den Vereinigten Staaten von Nord-Amerika nur 73,000 Tonnen erreicht. Russland steht in Europa an der Spitze. Deutschland besitzt 400 Rohzuckerfabriken und 150 Raffinerien. In Cuba existiren 230 Rohrzuckerwerke. Die Kultivirung der Zuckerrübe verbreitet sich jetzt merkwürdig schnell und bedingt eine Intensität der Kultur, die sich alljährlich für eine grosse Menge Leute als lohnend und angenehm erweist.

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TIGHT BINDING TEXT CUT OFF

WAGONS AND CARRIAGES.

The retail vehicle and harness business of the United States for the year 1900 has been a most satisfactory one in every respect. According to the views of a leading manufacturer in the Chicago "Record," it may be stated that at the commencement of the year manufacturers in the various lines of accessory trades were unable to produce their products in adequate quantities promptly to fill orders from their customers, notwithstanding the high cost of all material. This, in a measure, acted to the detriment of retailers, for they could not obtain the variety of styles and quantity desired for the opening of the spring and summer season until so late as seriously to affect the volume of sales.

Taken in its entirety, the vehicle industry presents a barometer of trade which may be safely relied upon to feel immediately for good or bad the effects of a change in the condition of the people. A temporary rise in the prices of these commodities, resulting from a healthy trade, does not diminish their sale, but only tends to increase an already large business. A local disturbance of business, however, while acting as a deterrent in the launching of new enterprises, also causes the merchant to retrench, and in no other line is this manifested so quickly as in the cessation of the sale of pleasure and business vehicles. Still, such a condition does not affect the sales to out-of town buyers of pleasure vehicles, which item, strange to say, shows a larger increase of sales for the year ending than any previous year of our business career.

BANKING FACILITIES ABROAD.

Some recent developments in the agricultural implement trade abroad are being very closely watched by leading American implement manufacturers. One of these is the growing demand from agents in Europe for American implements who heretofore have been looking largely to England for what they could sell. Another is a more liberal and practical system of transmitting money from remote European centers and agricultural localities to the United States. These two factors or developments mean a great deal to the implement interests of the United States. Anything which smooths the way for more intimate commercial relations, or for easier financial intercourse, naturally works to the advantage of both buyers abroad and makers in the United States. The progress made during the past year has not been great but there are strong financial interests at work to open up financial facilities, that will make direct dealing easy. This is not only true with reference to Europe, but also with South America. One bank is now being created which will have strong international connections, and through which those who handle United States products can receive payment for goods without the circumlocution that has heretofore prevailed. This extension of facilities for banking will be continued until all parts of the world will be brought into financial harmony.

No more important step than this has been taken for fifty years. The beneficial influences will be felt before they will be realized. The business interests do not, as yet, realize what this spread of banking facilities throughout the world means. The financiers of each nation have been studying their own separate interests. Great Britain has been looking after her colonies and dependencies, but all the outside world that did business with her colonies has been obliged to use English channels, with London as a clearing-house. Latterly, Germany has caught the idea of the importance of banking facilities, especially since she has invested some $800,000,000 in foreign countries, and now comes America, or rather the United States, to follow England and Germany in the establishment of banking aids to the development of business. Only the preliminary efforts are now being made, but the grand work will be prosecuted until American manufacturers will be able to sell and get their money for any thing for which they find an export market.

GOLD PER CAPITA.

Manufacturers all over the United States can recall the disasters which have periodically crushed enterprise and spread bankruptcy because of lack of money with which to transact business, or, speaking with exactness, because of the difficulty of getting the use of it in critical times when confidence was dissipated.

Let us take a look over the field to-day as against twenty-five years ago. Then, $4,000,000,000 in money answered the world's requirements. To-day the figures stand at $11,000,000,000, nearly three times as much. Of this, $4,841,000,000 was gold, $3,818,900 silver and $2,960,100 uncovered paper. The per capita circulation is as follows:

	Gold	Silver	Paper
United States	$13.37	$8.13	$4.41
Great Britain	11.06	2.75	2.75
France	21.05	10.04	5.04
Germany	13.35	3.08	3.32
Netherlands	5.30	10.17	8.14
Russia	6.05	.79	..
South American States	1.88	.62	30.50
Spain	4.36	13.77	8.86
Mexico	.68	8.11	4.32

Taking all countries in the world which have money, the average gold per capita is $3.66, silver $2.89, paper $2.24. The United States per capita circulation is $26.21; France, $37.03; South Africa, $27.63, and Australia $20.93. This country, with its greater necessities, can stand quite a greater increase in circulation than it has.

A FRANK ADMISSION.

The "Times'" Vienna correspondent says: Under the title "European Economical Alliance," Paul Leroy Beaulieu, in the "Nettesweiner Tageblatt," after reciting America's immense resources and growing population, says: "They may henceforth be regarded as the first industrial nation, and their superiority will become strikingly evident year by year. The United States will, moreover, soon have a considerable mercantile marine. Americans are already accustomed to regard Europeans, more particularly continentals, in about the same light as Orientals, who vegetate in dreams of the past." He points out that European states individually are comparatively restricted as to markets, and cannot carry a division of labor to the utmost limits, and he suggests an economical alliance and the regulation of tariffs by a permanent European commission. This commercial co-operation, he thinks, might lead to a gradual reduction of armament.

IMPLEMENTS FOR FRUIT GROWING.

European agriculturists who are interested especially in those fruits which are chiefly canned for commercial purposes would do well to note what the California horticulturists are doing and propose to do. In the first place, they conduct operations by the aid of every implement and mechanical device that will increase product and lessen cost. By these means they secure large crops, which demand an export trade to absorb. European competitors may feel safe against California horticultural enterprise, but it may pay to watch. The latest move is to organize the fruit growers and dealers. The next arrangement is to dry all fruit that does not bring a fixed price. The last step is to prod the railroads into putting on fast freight lines that will deliver carloads from the Pacific coast to the Atlantic coast in eight days. Now, if California green or dried fruit, produced by the most perfect system of labor-saving appliances, can be delivered at New York eight days after starting, what inherent difficulties are there in the way of some of these products reaching European centers in ten or twelve days more, say three weeks from the orchard or vineyard? The moral is that if European methods of horticulture can be improved by more progressive labor-saving devices, it should be done before the California trade-hunting wolf pokes its nose in at the door of the European producer. Protection is afforded by using the same implements employed by the California growers.

CHANGES FROM THE PAST.

Dynasties have come and gone for countless ages; nations rise, flourish and disappear; warriors rise and cover the earth with their bloody pathways; the generations come and go in endless procession, but the farmer farms as did his fathers, back, back into the remotest past, with no thought of change.

When the "Mayflower" crossed the Atlantic a seed was planted that contained within it a germ that would produce in time the greatest of all revolutions, a revolution to which those of Genghis Khan and Alexander and Cæsar were as but a passing breath, the revolution that had for its object the cultivation of the soil by something else than a hoe or a forked stick. Eternity has drawn only a breath or two since that germ was planted on a bleak New England coast, and a whole nation has arisen animated by but one thought, to use the hidden power of God to get food and clothing and comfort.

America, or rather the United States, has aroused the farmers of the world to revolution; not of dynasties, not of blood, not of war's passions, but a revolution which means the dominion of man over the earth through the cultivation of the soil by enlightened methods, which will bring plenty, stimulate the energies of the mind, expand the capabilities of the soul and arouse the latent capacities that the manhood never yet uncovered may be uncovered, and that the human energies may be harnessed to achieve the uplifting of humanity into a real Christian civilization which kings cannot crush or tyrants of bloodiest hue even tarnish.

EXPORT IMPLEMENT AGE

NUR FÜR'S AUSLAND BESTIMMT.

Ein unabhängiges Blatt, das ausschliesslich dem Exporthandel in landwirtschaftlichen Maschinen, Pumpen, Windmotoren und sämmtlichen Artikeln der Land- und Milchwirtschaft gewidmet ist.

ABONNEMENTS PREIS

Für ein Jahr, portofrei - - - - Mk 4 25

Gelder können per Tratte auf New York oder durch internationale Postanweisung übersandt werden.

Es wird gebeten, Mitteilungen jeder Art zu richten an:

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Der amerikanische Dollar hat einen Wert von ungefähr vier Mark. Ein Kilogramm kommt etwa zwei und ein Fünftel Pfund gleich.

Händler im Auslande, die sich um Auskunft über Maschinen oder Geräte an uns wenden, sollten, wenn möglich, Zeichnungen der dewünschten Artikel beischliessen, damit wir ihnen nach besten Kräften behilflich sein können.

Die amerikanischen Fabrikanten, die nach fremden Ländern exportiren, scheuen keine Mühe, sich die billigsten Frachtraten zu sichern. Sie sind hierzu in der That gezwungen, um ihren Kunden möglichst wenig Kosten zu verursachen.

Amerikanische Exporteure lenken ihre Aufmerksamkeit den besten Verpackungsarten zu. Nichtsdestoweniger empfiehlt es sich immer, beim Bezuge von amerikanischen Geräte anzugeben, welche Art Verpackung man vorzugsweise wünscht.

Die ausserordentlich praktischen Leiter der grossen amerikanischen Maschinenfabriken erachten keinen Versuch als zu gewagt und keine Ausgabe für zu gross, wenn es sich um Herstellung solcher Fabrikate handelt, die rasch verkäuflich und dauerhaft sind und den Feldarbeitern gute Dienste leisten.

Es ist durchaus unvorteilhaft, schwere Maschinen anzuschaffen, die zwei oder drei Pferde zum Zug benötigen, während die eigentliche Arbeit von einem weiteren Pferd geleistet wird. Gewicht verteuert. Stahl verleiht Leichtigkeit und Stärke. Neue Erfindungen haben viele lästige Bestandteile von Maschinen beseitigt.

Händler oder Kaufleute, die amerikanische Waren durch Vermittelung von Exportfirmen beziehen, thun stets gut daran, beim Erteilen ihrer Aufträge gleichzeitig auch die betreffenden Fabrikanten direkt zu benachrichtigen, um sicher zu gehen, dass sie auch wirklich die von ihnen bestellten Waren und keine anderen empfangen werden.

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INTENTIONAL SECOND EXPOSURE

AMERIKAS EISEN UND STAHL.

Die allerwarts befindlichen Leser unseres Blattes können sich von dem Verhältnisse der Vereinigten Staaten zu anderen Ländern mit Bezug auf ihre Stahlindustrie keine auch nur annähernd richtige Vorstellung machen, wenn sie es sich nicht ganz besonders angelegen sein lassen, mit demselben vertrau zu werden. Als Beweis der in der Stahlproduktion gemachten Fortschritte führen wir hier an, dass der Wert der Stahlausfuhr im Jahre 1880 sich auf nur 14,716,524 Dollar belief, während er im letzten Jahre die enorme Summe von 121,858,344 Dollar erreichte. Während dieser Zeit nahm die Einfuhr von Eisen und Stahl um zwei Drittel ab. Dieses Resultat ist dadurch erreicht worden, dass der Arbeitslohn — wenn wir eine der bedeutendsten Gewerke als Norm annehmen — auf 4 Dollar pro Tag bemessen wurde, wobei Arbeiter und Knaben inbegriffen sind. Die Kosten der Stahlfabrikation wurden hierdurch in den Vereinigten Staaten von Nord-Amerika geringer als in allen anderen Landern der Welt. Die Nachfrage nach Stahl wird sich innerhalb kurzer Zeit wahrscheinlich verdoppeln und sogar vervierfachen. Dasjenige Land wird naturlich am besten in der Lage ist, dieser Nachfrage Genuge zu leisten, oder einem grossen Teil derselben nachzukommen, das sein Produkt dem Auslande zum niedrigsten Preise abgeben kann.

Es durfte die Industriellen des Auslandes uberraschen, zu hören, dass bester Rohstahl in amerikanischen Stahlwerken zu einem Cent pro Pfund, oder noch billiger produzirt und abgegeben werden kann. Dieser Preis ist sogar noch hoch gegriffen und nur ein zwischen den Produzenten übereingekommener Preis, denn seit Jahren schon wird guter Stahl hier zu ¾ Cents pro Pfund mit Nutzen verkauft.

Die Bedeutung dieses Umstands ist für die Leiter commerzieller und industrieller Unternehmungen der ganzen Welt besonders wichtig, denn der amerikanische Stahl findet seinen Weg überall hin, und seine grosse Billigkeit erweitert und verfielfältigt die Nutzanwendung des Stahls, während sie der Stahlindustrie selbst eine mächtige Entwikkelung verleihen wird, die die Leistungsfähigkeit der Vereinigten Staaten von Nord-Amerika in diesem Industriezweige noch bedeutend erhöhen wird.

Da dieses Land den billigsten und anerkannt besten Stahl der Welt hervorbringt, so ergiebt sich hieraus als naturliche Folge, dass der allgemeine Gebrauch desselben für den Bau aller Arten von Maschinen auch die Herstellungskosten der letzteren vermindern muss. Die Industriellen Amerikas haben dem allgemeinen Welthandel noch nicht ihre volle Energie zugewendet; sie bereiten sich jedoch einstweilen hierzu vor. In kurzer Zeit wird die Seefracht eine niedrige sein, alle Absatzgebiete der Welt werden mit Vertretern versehen sein, und permanente Ausstellungen werden den Absatz der Waren zu dem niedrigsten Preise ermöglichen, bei dem noch ein Nutzen übrig bleibt.

Mit einem Worte, wir stehen hier vor einer neuen Macht, Grösse oder Kraft. Eine grossartige Industrie ist in den Vereinigten Staaten von Nord-Amerika neu ins Leben getreten, der Schiffbau nämlich, und die vielfachen Möglichkeiten, die der Welthandel in Aussicht stellt, werden hier mit wachsamem Auge verfolgt. Ein grosser Überschuss an Material ist im Entstehen begriffen. Andererseits steigert sich jedoch der Weltbedarf und dürfte diesen Überschuss bald wieder aufzehren.

Mit anderen Worten, die Welt, ihre Industrie, ihr Handel und die auswärtigen Beziehungen aller ihrer Völker werden einer Neubildung und Veränderungen unterworfen, und die Ereignisse folgen einander auf raschem Fusse. Die Entwickelung tritt mit geradezu vulkanischer Gewalt auf; die Energie der allgemeinen Vorwärtsbewegung concentrirt sich wie der Sturm vor seinem Ausbruch. Das Alte verschwindet schnell, und die Morgenröte des neu Einbrechenden muss die grössten Industriellen der Welt wohl gewappnet und thatbereit antreffen.

Die Geschäftswelt der ganzen Erde hat zweifelsohne schon lange herausgefunden, dass sich der internationale Verkehr, sobald die gegenwärtig noch zwischen den Hauptnationen schwebenden Verträge endgiltig abgeschlossen sein werden, bedeutend heben, sowie leichter und kürzer gestaltet wird. Die Regierung der Vereinigten Staaten von Nord-Amerika lässt sich die Abschliessung neuer Verträge, die sich auf die neuesten Bedürfnisse und Möglichkeiten der Produktion und des Handels gründen und grössere Absätzgebiete im Auslande schaffen, besonders angelegen sein. Der industrielle Fortschritt der Vereinigten Staaten von Nord-Amerika, Grossbritanniens, Deutschlands, Frankreichs, Oesterreichs und anderer Länder erfordert, dass die Handelspolitik jedes dieser Staaten eine neue, breitere Grundlage erhalte. Die wichtigste der in Erwägung befindlichen Maassnahmen ist der Hay-Pauncefote'sche Vertrag, der sich mit den Verhältnissen befasst, die den Interessen Grossbritanniens und der Vereinigten Staaten von Nord-Amerika bei der Eröffnung einer Verbindung zu Wasser zwischen dem Atlantischen und Stillen Ozean am besten entsprechen. Eine Anzahl minder wichtiger, mit weniger bedeutenden Nationen zu ratifizirenden Verträge stehen noch aus. Die Regierungen der ganzen Welt bereiten unter einander engere und zahlreichere Verbindungen vor, die eine Verminderung der Sonderinteressen, allgemeine Verbrüderung, Ausbreitung des Welthandels und naturgemäss auch weitere Entwickelung auf dem Gebiete der Industrie und der Landwirtschaft nach sich ziehen werden.

Amerikanische Erfindungen werden mit jedem Jahre zahlreicher. An allen Arten von Maschinen und Geräten werden Verbesserungen vorgenommen. Sowie ein Teil eines Mechanismus zur Vollkommenheit gebracht zu sein scheint, taucht schon wieder eine neue Erfindung auf, die seine weitere Verbesserung zur Folge hat. Einer der grossen Vorzüge der amerikanischen Geräte und Maschinen liegt daher auch darin, dass sie jedes Jahr besser werden, und dieser Umstand ist es, der den amerikanischen Landwirt zum Ernährer der ganzen Welt macht. Er verwendet die besten Geräte, die überhaupt angefertigt werden, und seine Produkte kosten ihn folglich weniger, als sie Landwirte anderer Länder zu stehen kommen.

NEUE ERFINDUNGEN.

Rasche Arbeit ist die Seele der modernen Landwirtschaft Um mit dem Anwachsen der Arbeit gleichen Schritt zu halten, müssen grössere Kräfte geschaffen werden, und um diese zu erlangen, müssen den bereits durchgeführten neuen Verbesserungen fortwährend noch neuere Erfindungen beigegeben und angepasst werden. Die Verwendung grösserer mechanischer Kräfte hat natürlich auch höhere Kultur und Aufschliessung des Bodens zur Folge, die wiederum mehr Maschinenteile und neue Maschinen nötig machen. Diese Verhältnisse bedingen die Dienste gut ausgebildeter Werkführer zur Leitung der Fabriken. Amerikanische Fabriken kommen all diesen Anforderungen nach, sobald sich dieselben fühlbar machen; oft kommen sie ihnen sogar zuvor. Diese Voraussicht des exportirenden Industriellen kommt am meisten den Agenten im Ausland zustatten, deren Einkommen wesentlich vom Exporte der neuesten und besten Maschinen abhängt.

Viele Länder suchen die Unterstützung der Vereinigten Staaten für ihre Landwirtschaft nach und werden darin wahrlich nicht enttauscht. Amerikanische Kataloge werden immer stärker zu Rate gezogen. Landwirtschaftliche Unternehmungen werden nach der Verlasslichkeit der Maschinen beurteilt, die sie verwenden. Der Unterschied zwischen modernen und althergebrachten Methoden zeigt sich in der Landwirtschaft allenthalben. Die von den besten Maschinen, Apparaten und Geräten gewährten Vorteile eifern Viele, die bisher ohne dieselben durchgekommen sind, zur Anschaffung so wirksamer Hilfsmittel an, und sie scheuen keine Anstrengungen zur Erreichung dieses Zwecks. Von verschiedenen Teilen der Erde wird uns die Nachricht zu Teil, dass starke Nachfrage nach Maschinen und Geräten erster Güte in Aussicht steht.

Man hört heutzutage weniger als noch vor weniger Jahren von Vorurteilen gegen gewisse Handelsartikel oder von Bevorzugung derselben, auf Grund dessen reden, dass sie in diesem oder jenem Lande angefertigt worden sind. Es giebt sich im Allgemeinen eine bedeutende Zunahme des Gemeingeistes kund. Allerdings suchen die Landwirte Deutschlands sich im Wege der Gesetzgebung in gewissem Sinne gegen das Ausland zu schützen, dies geschieht jedoch durchaus nicht aus nationalem Vorurteile. Ein höheres Verständnis der Anforderungen einer fortschrittlichen nationalen Politik verschafft sich nach und nach bei allen Völkern der Erde allgemein Geltung. Man beginnt, sich in den Sphären des Welthandels dem Gefühle hinzugeben, dass für den Industriellen sowohl, als auch für den Landwirt aller Länder die ganze Welt als Markt zu dienen hat. Niemand kann mit Sicherheit voraussagen, wo sein Produkt schliesslich bleibende Verwendung finden wird, wenn es einmal seine Fabrik verlassen hat. Die Strömung des Welthandels trägt es fort, und es mag seinen Weg selbst zu anscheinend ganz unzugänglichen Teilen des Erdballs finden.

DER WELTHANDEL.

Das unverkennbare Streben so vieler europäischer Kaufleute, sich mit der wahrscheinlichen Entwickelung des Wettbewerbes der Vereinigten Staaten von Nord-Amerika und deren Einfluss auf Handel und Gewerbe näher vertraut zu machen, deutet auf einen bevorstehenden Umschwung in den zwischen Europa und Amerika bestehenden Handelsbeziehungen hin.

In den Vereinigten Staaten von Nord-Amerika gilt, wie in allen anderen Ländern, der Grundsatz, dass die heimische Industrie geschützt werden müsse, und das Resultat hiervon tritt nun in der ganzen Welt durch das Anwachsen des Exporthandels der Vereinigten Staaten deutlich zu Tage. Die Kraft und Energie der Konkurrenz sind hierzulande ebenso lebhaft entwickelt, wie in europäischen Ländern, ja übertreffen dieselben noch in vieler Hinsicht. Die enorme und setig anwachsende Produktionsfähigkeit dieses Landes erregt die gespannte Aufmerksamkeit der ganzen Welt, und mit allgemeiner Spannung wird der Lösung dieser Frage entgegengesehen.

Betrachtet man die Vereinigten Staaten vom europäischen, trans-ozeanischen Standpunkte aus, so findet man, dass hier verschiedene Einflüsse, Verhältnisse und Kräfte massgebend sind, die seitens der Händler und Agenten aller Länder volle Beachtung verdienen.

Die Vereinigten Staaten von Nord-Amerika sind urplätzlich eine der drei Hauptkräfte im Welthandel geworden: England und Deutschland sind die zwei anderen. Das Zollsystem und die Goldwährung der Vereinigten Staaten, deren Durchführung ein ganz unerhörter Aufschwung des Schiffbaues auf dem Fusse folgte, bieten dem internationalen Handel der ganzen Welt, welcher in den Händen von Exporteuren und Importeuren ruht, ein interessantes Problem dar, das wohl einen Umschwung der Handelsverhältnisse zur Folge haben dürfte. Die Vereinigten Staaten von Nord-Amerika verfügen über die billigsten Produktionsmethoden der Welt, sowie über die niedrigsten Frachtsätze und die billigste Handarbeit, wenn letztere nach dem Produkte eines durch Maschinarbeit unterstützten Arbeiters bemessen wird; und diese Umstände lassen das Problem der Führerschaft im Welthandel als ein mehr als vorübergehendes Studium erscheinen.

Einen anderen Faktor dieses Problems bilden die industriellen Combinationen. Die Amerikaner können sich selbst kaum von der eigentlichen Bedeutung derselben Rechenschaft geben. Aber diese Industrie-Vereinigungen sind nun einmal da, einige Hundert an der Zahl und repräsentiren Tausende von Millionen Dollar, die anscheinend nur zu dem Zweck erworben wurden, um durch ihre Vereinigung noch mehr Geld zu verdienen als zuvor.

Hierzu kommt noch ein anderer, für den europäischen Geschäftsmann höchst beachtenswerter Faktor: das gigantische Schienennetz, das sich vom Atlantischen bis zum Stillen Ozean hinstreckt, neben welchem noch die Dampferlinien genannt werden müssen, die ihren Handel nach dem Westen bis zu den Ländern des Orients und Osten, nach Europa und Asien hin, ausbreiten, um endlich den ganzen Erdball zu umschlingen.

Amerika, mit seinen ungeheuren Länderstrecken und Weizenfeldern auf der Hochebene des Nordwestens, seinen zwölf Golfstaaten, den grössten Baumwollproduzenten der Welt; mit seinen mit Verpackung und Zubereitung enormer Quantitäten von Fleisch beschäftigten, im ganzen Land zerstreuten Schlachthäusern; seinem Appalachagebirge, das mächtige Lager exportirbarer Steinkohle enthält; seinen Stahl-Erzen, den ergiebigsten der Welt, die denn auch den billigsten Stahl der Welt liefern; seinem ungeheueren Vorrate an festen und flüssigen Brennstoffen in Form von Steinkohle, Coke, Petroleum und natürlichem Gas; seinen endlosen Försten, deren Ränder den Antipoden Bauholz liefern; und endlich seinen Maschinen, die die Arbeitskraft seiner Bevölkerung verzehnfachen—Amerika besitzt als naturgemässe Folge aller dieser Vorzüge eine Thatkraft, Energie, Macht und Fähigkeit, die dazu berufen sind, die ganze Welt zum Felde ihrer Thätigkeit zu machen.

Es ist diese, teilweise noch der Entwikkelung harrende, dem Lande innewohnende Urkraft, die wir der Beachtung der Exporteure und Importeure der Welt anempfehlen. Vor einer Dekade war diese Kraft noch nicht zum Durchbruch gekommen; heute aber existirt sie. Nicht als Amerikaner, sondern als Weltbürger fragen wir, in welcher Richtung sich diese neue und mächtige Kraft entwickeln wird. Dieser neue Faktor ist kein Schwert, das Throne stürzt und Städte zerstört, sondern eine im Stillen wirkende Macht, die alle Länder, Paläste und Hütten mit ihrem anfeuernden, civilisirenden und erziehenden Einflusse durchdringt. Europa, Asien, Afrika und die neue Grossmacht, Australien, werden die grossartigen Früchte dieses geistigen Aufstrebens geniessen. Die Flotten der Zukunft werden den reichen Überschuss an Feld und Gewerbe allen Denen zutragen, die seiner bedürfen; nicht mit feindlichen Hintergedanken, sondern im Vollgefühl der Hingabe an ein hehres Ideal, das im Menschenherzen aufflammt, wenn sein Genie auf dem Pfade der Entwickelung irdischer Zustände Hervorragendes leistet.

AMERIKANISCHE WAGEN FÜR DIE LANDWIRTSCHAFT.

Nach alledem, was den Benutzern von Feldwagen in allen Teilen der Welt bereits über die Vorzüge der amerikanischen Wagen mitgeteilt worden ist, sollte man annehmen, dass sich hierüber nichts Wesentliches mehr hinzufügen liesse. In einer Hinsicht ist dies auch der Fall; man darf sich jedoch nicht dem Glauben hingeben, dass die steten Verbesserungen die Feldwagenindustrie zum Stillstand gebracht hätten. Sachverständige studiren die neuesten diesbezüglichen Arbeiten der hervorragendsten amerikanischen Feldwagenfabriken, und finden, dass es für die Fabrikanten der Vereinigten Staaten von Nord-Amerika immer noch Mittel und Wege giebt, noch bessere Wagen zu bauen. Der Antrieb zu diesen Verbesserungen rührt in erster Reihe von den Anforderungen des heimischen Bedarfes her, ferner aber auch von der Konkurrenz ausländischer Wagenbauer im Exportgeschäfte. Die Theorie des Wagenbaues mag sich vielleicht erschöpft haben, aber die praktische Anwendung ihrer Lehren bietet genügend Raum für neue Erfahrungen dar. Die Entwickelung des Minenwesens, des Städteverkehrs und der Landwirtschaft ruft steigende Nachfrage nach Wagen von grösserer Tragfähigkeit ohne bedeutende Erhöhung des Gewichts oder des Kostenpreises hervor. Die Art und Weise, in der die amerikanischen Wagenbauer diesen Anforderungen gerecht werden, verdient alle Anerkennung, die denn auch nicht lange hat auf sich warten lassen. Die Regierung ist hierin nicht zurückgeblieben, und dabei sind ihre Ansprüche ausserst hohe. Es mag den Fabrikanten dieser verbesserten Wagen zur Genugthuung dienen, dass sie alle Erwartungen erfüllt haben und allen Ansprüchen genügen können. Der Bedarf an Wagen, auf denen man enorme Lasten ohne Schaden und fast ohne Erschütterung transportiren kann, wächst mit jedem Jahre. Die Wagenbauer sahen denselben aber voraus, und haben allen ihren Kunden den Vorteil stärker gebauter Wagen völlig klargelegt. Die Berichte und Zeugnisse derer, die diese Wagen benützt haben, verdienen die ernste Aufmerksamkeit aller Käufer im Auslande.

Die amerikanischen Industriellen haben im eigenen Lande genug zu kämpfen, um die Fuhrerschaft nicht zu verlieren. Sie machen sich unter einander hartnaeckige Konkurrenz, um den Bedürfnissen einer Bevolkerung von 75 Millionen Menschen gerecht zu werden, und ihre Produkte müssen, wenn sie ihre Stellung behaupten wollen, ersten Ranges sein. Wenn Amerikaner, die sich die Wichtigkeit guter, arbeitsparenden Maschinen und Werkzeuge wohl bewusst sind, einem Fabrikanten ihre Kundschaft zuwenden, so ist dies ein schlagender Beweis für die Vorzuglichkeit seiner Produkte; denn Niemand giebt einen Fabrikanten schneller auf oder verweigert mit grösserer Entschiedenheit die Annahme seiner Produkte als der amerikanische Landwirt, wenn letztere den an sie gestellten Anforderungen nicht vollkommen entsprechen sollten.

Der europäische Landwirt, der amerikanische Geräte und Maschinen bezieht, handelt in der sicheren Ueberzeugung, dass dieselben die Billigung der sachverständigen amerikanischen Landwirte besitzen, und dass ihre Qualität unerreicht und ihr Preis stets zufriedenstellend ist. Die amerikanischen Fabrikanten sind in der That eifrig bemüht, ihre Maschinen und Geräte im Auslande einzuführen, damit Agenten und Landwirte in fremden Ländern sich davon überzeugen, wie vorteilhaft es für sie ist, den amerikanischen Fabrikaten den Vorzug zu geben. Die Landwirte aller Länder zahlen Steuern, geniessen nur geringe Unterstützung seitens ihrer Regierungen und sind gezwungen, ihre Produkte zu Preisen zu verkaufen deren Bestimmung ihnen nicht zusteht; mit der Einführung besserer Geräte und Maschinen indes und bei der sich hieraus ergebenden grossen Arbeitsersparnis, die in den Produktionskosten eine grosse Rolle spielt, müssen sich ihre Aussichten auf guten Gewinn weit vorteilhafter gestalten.

Nach Europa kommende Amerikaner vermögen nicht einzusehen, warum dort eine schwere Maschine verwendet wird, die vier Zugpferde benötigt, wenn eine leichtere Maschine, die billiger und ebenso so stark ist, mit nur einem oder zwei Zugpferden dieselbe Arbeit leisten kann.

TIGHT BINDING TEXT CUT OFF

LANDWIRTSCHAFTLICHE HANDGERÄTE.

Die Firma The Geneva Tool Co., in Geneva, Ohio, Vereinigten Staaten von Nord-Amerika, ist in diesem Teile der Vereinigten Staaten, d. h. westlich des Ohio-Flusses, die älteste Fabrik landwirtschaftlicher Handgeräte.

Die Produkte dieser Firma umfassen Gabeln aller Art, wie Heu-, Mist-, Hacken- und Gerstengabeln, Coke-, Kohlen-, Schotter-, Gerberlohe-, Erz-, Schleussen-, Stall-, Fisch- und Rübengabeln; Erdgabeln, Aufladegabeln für Ballirpressen, u. s. w.; mit einem Worte Gabeln für alle Zwecke.

Auf dem Gebiete von Hauen werden Feld-, Garten-, Unkraut-, Strassenbau-, Mörtel- und Baumwollhauen in allen gewünschten Formen geliefert.

Ferner werden hier auch Garten- und Grasrechen, Heu- und Getreiderechen, Asphalt-Weg-, Kohlen- und Schotterrechen, wie auch Kartoffelhaken, Düngerschlepper, Steinhaken, Muschelgräber, Trottoirkratzer, Garnituren zur Blumenzucht und Zuckerrübenkultur, Pferde-Heurechen, Schaufelpflüge, Kultivatoren, Sensenstiele für Gras- und Gebüscharbeit, Werkzeuggriffe u. s. f. fabrizirt.

Die vorstehende Liste giebt eine Vorstellung von der grossen Auswahl in Handgeräten, die von der Geneva Tool Company angefertigt werden. Die Fabrik liegt an zwei grossen Eisenbahnlinien und verfügt in Folge dessen über ganz vorzügliche Transportbequemlichkeiten für ihrer Produkte nach der Küste und anderen Punkten. Sie befindet sich ausserdem in nächster Nähe der bedeutendsten Eisen- und Stahlwerke der Vereinigten Staaten; die besten Eschenwaldungen der Welt, sämmtlich Stockholz, sind gleichfalls in nächster Nachbarschaft gelegen, wie auch ausgedehnte Steinkohlenlager.

Wir bringen auf Seite 48 eine Abbildung der Fabriksanlagen, die übrigens seitdem bedeutend vergrössert worden sind. Der gegenwärtige Flächenraum der Fabriksgebäude und Magazine beläuft sich auf etwa 180,000 Quadratfuss. Mehr als 1,800,000 Gabeln, Hauen, Rechen, Hacken u. s. w. werden hier jedes Jahr fabrizirt und abgeliefert, wozu noch 120,000 Sensenstiele und mehr als 2,000,000 Werkzeuggriffe kommen. Drei Hundert Arbeiter sind hier das ganze Jahr über beschäftigt, und die Verwaltung ruht in den Händen erfahrener Leute, die sich schon seit langen Jahren mit der Herstellung und Verbesserung von Handgeräten beschäftigen. Die Fabrik besitzt ferner eine Zweigfabrik in Paducah, Kentucky, Vereinigte Staaten, der ausschliesslich die Anfertigung von Werkzeuggriffen obliegt.

Die Produkte der Fabrik sind über sämmtliche Staaten der Union verbreitet und werden nach dem europäischen Kontinente, nach Grossbritannien, Kanada, Mexico, Südamerika, Central-Amerika, Südafrika, Australien und Japan exportirt.

Die Firma The Geneva Tool Co. widmet der sorgfältigen Verpackung und dem pünktlichen Versande ihrer nach dem Auslande gehenden Produkte besondere Aufmerksamkeit. Die Export-Abteilung wird von erfahrenen, umsichtigen Beamten geleitet, die die Einteilung und den Betrieb des stetig zunehmenden Ausfuhrhandels der Fabrik gründlich verstehen und es sich zur Aufgabe machen, alle eingehenden Aufträge sorgfältig und prompt auszuführen.

Der neue, umfassende und reich illustrirte Fabrikskatalog No. 55, der soeben für das Jahr 1901 erschienen ist, wird auf Verlangen franko zugesandt. Die hier angefertigten Waren sind nach jeder Richtung hin ganz ausgezeichnet und preiswert. Geräte, die die Handelsmarke "Geneva" tragen, sind mustergültig und gewähren stets die grosste Befriedigung.

CLARK'SCHE "SCHNEID-GERÄTE."

Die Clark'schen "Schneid-Geräte" werden nur von der Firma Cutaway Harrow Company in Higganum, Connecticut, Vereingte Staaten von Nord-Amerika, angefertigt. Dieselben sind schon seit so lange bekannt und wird so starke Reklame für sie gemacht, dass fast jeder fortschrittliche Landwirt sie kennt. Die Schneiden dieser Geräte sind sämmtlich aus feinstem Messerstahl. Die Eggen und Scheibenpflüge dieser Fabrike werden in jeder gewünschten Grösse angefertigt, um allen besonderen Ansprüchen der Kultur und Bodenbeschaffenheit zu genügen. Dieselben sind eigentlich eine Kombination von Egge und Pflug, verrichten gleichzeitig die Arbeit beider Geräte, und kommen den Anforderungen aller Gemüse- und Obstgärtner, Landwirte und Pflanzer aufs beste nach. In der That sind sie für die Baumwollpflanzungen, die Obstgärten und die gleich gut geeignet. Sie arbeiten eben so gut auf Abhängen wie auf Ebenen, und leisten bessere, fünf bis zehnmal raschere Arbeit als die ehemaligen Geräte. Alle diejenigen, die sich ihrer bedienen, zollen ihnen unaufgefordert das höchste Tribut. Sie werden in allen fremden Ländern, besonders in Australien, Neuseeland und allen getreidebauenden Regionen der Welt in ausgedehntem Maasse verwendet.

Ueberall, wo die Clark'schen "Schneid-Geräte" verwendet werden, stellt sich der Ernte-Ertrag um 15 bis 20 Prozent höher. Diese Anpassungsfähigkeit an verschiedene Kulturen konnte nur nach langen Jahren und durch praktische Versuche auf dem Felde erzielt werden und ist ausserdem nur der unermündlichen, persönlichen Thätigkeit Herrn Clark zu danken, der auf seinen weiten Reisen durch alle Staaten der Union fortwährend Beobachtungen angestellt hat. Er hat thatsächlich den ganzen amerikanischen Kontinent bereist und die verschiedenen Bodenverhältnisse überall persönlich in Angenschein genommen und liess sich ferner durch die Erfahrungen der Landwirte und Pflanzer in seinen Plänen leiten. Dieser seiner vielseitigen Erfahrung verdankt der umwendbare, vorstehende Kopf der bei den "California"- und den sog. "Extension head"-Eggen zur Verwendung gelangt, seine Entstehung. Diese Eggen reichen unter den Pflanzenstämmen nach vorne hin und flachen den Boden der Obstgärten ab, ohne den Bäumen Schaden zuzufügen.

Die mit Samenstreuern versehenen Gangpflüge sind eine vorzügliche Kombination von Drill und Pflug und bauen Getreide oder Kichererbsen während des Pflügens in einer Breite von sechs Fuss an. Der Fahr-Scheibenpflug erleichtert die Arbeit des gewöhnlichen Streichpfluges wesentlich. Die für Baumwollenfelder gebauten Geräte, die sich auch für gewöhnliche Feldarbeit eignen, sind bedeutende Kostensparer. Die Firma liefert auch die Clark'schen Wurzelschneider und Kehreggen zum Eggen und Nivelliren von Feldern und Rasenplätzen. Diese Geräte, nebst der Samson'schen Tabakpresse, leisten sämtlich ganz vorzügliche Arbeit.

Alle diese Maschinen sind von garantirt bester Qualität und sollen besser als andere Geräte dieser Art funktioniren. Die Pflüge und Eggen werden je nach Bedarf in jeder gewünschten Grösse und von jeder beliebigen Leistungsfähigkeit geliefert, und wir können daher allen Händlern anempfehlen, sich den von der Fabrik zur Verfügung gestellten Katalog kommen zu lassen, um eine genaue Beschreibung aller Erzeugnisse letzterer zu erhalten.

Der Ruf dieser Geräte ist ein derartiger, dass sie sich in Europa sowohl, wie auch in Amerika und in allen anderen Teilen der Erde der grössten Beliebtheit erfreuen und überall schnellen Absatz finden.

NIEDRIGERE FRACHTSÄTZE.

Der Handel der Vereinigten Staaten von Nord-Amerika mit europäischen Ländern wird durch die Erleichterung des Verkehres zwischen dem Inneren des Landes und der Küste wesentlich gehoben werden. Der von den grossen Seen im Inneren zum Hudsonstrome gebaute, auf Frachtboote berechnete Kanal, der direkt nach New York führen wird, ist ein mächtiger Fortschritt auf diesem Gebiete. Der alte Kanal, der seiner Zeit ein so gewaltiger Faktor im Aufblühen New Yorks war, genügt heute nicht mehr. Der Bau eines neuen, auf 62 Millionen Dollar veranschlagten Frachtkanales wird im nächsten Herbst zur Abstimmung kommen, und die Anzahl der abstimmenden Interessenten wird sich im Staate New York auf eine Million belaufen. Das Projekt ist von nationaler Bedeutung, und seine Durchführung hängt von der Abstimmung der Bevölkerung eines der 45 Staaten des Landes ab.

Die Notwendigkeit besserer, grösserer und billigerer Transportseinrichtungen ist eine so dringende, dass zu diesem Behufe eine weitere Maassnahme in Vorschlag gebracht worden ist, nämlich der Bau einer Frachtbahn quer durch den Staat New York, die 20,000 Dollar per Meile kosten und mit allem nötigen Zubehör auf etwa 50 Millionen Dollar zu stehen kommen soll. Diese Eisenbahn wird wahrscheinlich mit Schienen von 100 Pfund Gewicht pro Yard gebaut, und mit je 100 Tonnen wiegenden Lokomotiven ausgerüstet werden, die 100,000 Pfund schwere Waggons schleppen können.

Unsere Leser in Europa und anderwärts können sich darauf verlassen, dass die Vereinigten Staaten bald über weniger kostspielige, ja über die denkbar billigsten Verbindungen zwischen dem Innern und der Küste verfügen werden. Es wird dies entweder durch den Welland Kanal und den St. Lorenzstrom nach dem Meere herunter oder durch einen tiefen Frachtkanal, oder auch durch eine Güterbahn bewerkstelligt werden. Das eine steht jedenfalls fest: dass die Aera noch billigeren Transports in Kürze bevorsteht, und dass Europa und Amerika sich durch ihren Eintritt noch näher an einander gebracht sehen werden.

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Le dollar américain ($) équivaut à environ cinq francs en France. Un kilogramme équivaut à environ deux livres et un cinquième.

Ne jamais oublier d'envoyer des instructions complètes au sujet des voies par lesquelles les articles devront être expédiés. Quelques indications données à propos peuvent éviter des retards longs et inutiles.

Tous les fabricants américains qui exportent des marchandises en pays étrangers, ont soin d'obtenir les taux de fret les plus bas. Ils sont en réalité obligés d'agir ainsi afin d'occasionner à leur client le moins de dépense possible.

Les négociants étrangers qui nous écrivent pour demander des renseignements au sujet de machines ou d'instruments agricoles devraient envoyer des dessins ou des croquis des articles qu'ils désirent, de manère à nous mettre mieux en mesure de leur rendre service.

Les négociants ou marchands qui achètent des articles américains par l'intermédiaire de maisons d'exportation, devraient écrire en même temps au fabricant; de cette façon le marchand sera sûr de recevoir les articles qu'il a commandés au lieu d'articles d'un autre genre.

La récolte de maïs aux Etats-Unis s'élève à environ 1,500,000,000 boisseaux (environ 750,000 quintaux) par an. Cette énorme production est en grande partie consommée dans le pays; on en nourrit le bétail, bien que le maïs figure aussi beaucoup comme aliment sur la table du fermier.

Les exportateurs américains se sont particulièrement appliqués à employer les meilleurs modes d'emballage. Il serait bon, toutefois, pour tous ceux qui commandent des instruments agricoles américains, de donner des instructions sur la façon dont ils préfèrent que leurs marchandises soient emballées.

Le développement continu du commerce d'exportation des Etats-Unis ne devance pas la demande de machines de fabrication américaine. Par suite de la demande croissante pour des machines agricoles, dans tous les pays étrangers, l'exportation de ces machines devient plus rapide et plus considérable.

C'est une perte complète que d'acheter un instrument agricole pesant, pour lequel il faut peutêtre deux ou trois chevaux rien qu'à le trainer, alors que le travail réel est accompli par un cheval supplémentaire. Le poids est coûteux. L'acier donne la légèreté et la solidité. L'esprit d'invention a fait disparaitre beaucoup des pièces de machine peu désirables.

Les directeurs, essentiellement pratiques, des grandes usines américaines où l'on fabrique les machines agricoles, considèrent qu'il n'y a pas d'expérience trop risquée ou de depense trop grande pour produire les articles qui se vendent le mieux, qui durent le plus longtemps et qui donnent le plus de satisfaction à ceux qui exploitent les fermes.

Ceux qui suivent les exportations américaines auront remarqué que les Etats-Unis expédient une grande quantité de brouettes. La brouette américaine est bien fabriquée, avec un bois qui supporte tous les genres de climat et résiste à tous les usages. On les fait aussi en fer et en acier. Cela indique qu'il s'accomplit dans le monde entier une énorme quantité de travail où la brouette est employée. Certains fabricants américains de brouettes y ont apporté récemment quelques perfectionnements, qu'ils considèrent comme leur donnant la supériorité.

Beaucoup de pays comptent sur les Etats-Unis pour les aider en agriculture, et ils ne sont pas désappointés. On consulte plus fréquemment les catalogues américains. Les entreprises agricoles se mesurent d'aprés le degré de confiance qu'on peut placer dans des machines. La différence entre les méthodes modernes d'agriculture et celles qui ne le sont pas, est visible partout. Les avantages offerts par les meilleurs instruments poussent beaucoup de gens qui ont travaillé sans eux, à lutter pour obtenir une aide aussi efficace. De diverses parties du monde vient la nouvelle d'une demande prochaine pour les meilleurs instruments.

Les marchands d'instruments agricoles aux Etats-Unis se sont constitués en sociétés dans quelques Etats et tiennent des conventions annuelles. Ils ont des comités pour s'occuper de toutes les difficultés entre marchands et fabricants. Les fabricants se sont également constitués en sociétés, et, dans les deux groupes, le nombre des membres est considérable. Ils envoient des délégués assister aux conventions les uns des autres, et ils travaillent en parfaite harmonie. Seuls, les fabricants les plus dignes de confiance peuvent devenir membres de la société dite Manufacturers' National Association ("Société Nationale d'Industriels"), et aucun négociant douteux ne peut entrer dans les sociétés des marchands. Fabricants et marchands s'efforcent de protéger le commerce, à l'intérieur et à l'extérieur, et il en résulte que les instruments agricoles américains doivent forcément être de la plus haute qualité.

Les expéditions de marchandises en tous genres pour Londres et Liverpool, pendant la dernière semaine de décembre, en prenant cette semaine comme exemple, se sont élevées à $3,512,640, chiffres qui en diront plus que toute autre chose aux négociants européens au sujet de la puissance croissante d'exportation des Etats-Unis. Ce fait démontre qu'il est sage de consulter les Etats-Unis sur ce qu'on peut acheter dans de bonnes ou de meilleures conditions qu'ailleurs. Les fabricants d'instruments agricoles aux Etats-Unis sont résolus à l'emporter sur tous s'ils ne l'ont déjà fait. Ils se rendent compte des forces contre lesquelles ils auront à lutter en Angleterre et en Allemagne, au point de vue de l'habileté, du prix et de l'acuité commerciale. Le commerce d'exportation des Etats-Unis peut subir l'examen sévère et minutieux de tous les négociants, et particulièrement des marchands de machines et d'instruments agricoles du monde entier.

Les chiffres qui viennent d'être publiés par le gouvernement des Etats-Unis pour l'année 1900 font voir que le total du commerce avec l'étranger a été de $2,307,102,970, dépassant de $232,667,589 celui de 1899. La valeur des exportations a été de $1,478,050,854, soit $202,582,883 de plus qu'en 1899. Les importations se sont élevées à $829,052,116, ou $30,084,706 de plus qu'en 1899.

La balance du commerce pour 1900 a été de $648,998,738, soit une augmentation de $172,498,177 par rapport à 1899.

Ces chiffres contiennent leur enseignement et font ressortir leur morale. Le développement industriel des Etats-Unis est en enfance. D'ici un an, une nombreuse flotte de vapeurs de haute mer sera venue s'ajouter à nos facilités maritimes, et dans une vingtaine de ports il y aura des quais d'embarquement et de débarquement superbement installés. Les hommes d'affaires des Etats-Unis se préparent pour le commerce du monde.

Les relations entre le sucre de betterave et l'agriculture en Europe deviennent très intéressantes. La proportion entre la quantite de machines et d'instruments agricoles nécessaires, par rapport aux autres produits agricoles, indique quelques résultats très intéressants dont les importateurs d'instruments agricoles en Europe prennent bonne note. L'industrie aujourd'hui en enfance promet de devenir universelle. Une des raisons en est que la canne à sucre ne peut pas être cultivée au-dessus du quarantième parallèle de latitude, tandis que la betterave réussit jusqu'au soixantième parallèle. La production du sucre de betterave en Europe est de 5,500,000 tonnes, tandis que 73,000 tonnes représentent la production actuelle aux Etats-Unis. La Russie est à la tête de l'Europe sous ce rapport. L'Allemagne possède 400 usines fabriquant le sucre brut et 150 raffineries. Cuba a 230 fabriques de sucre de canne. La culture de la betterave à sucre se développe aujourd'hui avec une rapidité remarquable; la betterave demande une culture intensive, qui devient chaque année une source de bénéfice et d'occupation agréable pour un grand nombre de personnes.

TIGHT BINDING TEXT CUT OFF

LE FER ET L'ACIER D'AMÉRIQUE.

Les lecteurs de ce journal dans le monde entier ne peuvent pas se rendre de compte exact des relations des Etats-Unis avec les nations étrangères, au sujet de l'industrie de l'acier, à moins d'avoir fait un effort spécial pour se renseigner sur cette question. La preuve des progrés réalisés dans la production de l'acier, est que la valeur des exportations américaines en 1880 était de $14,716,524. L'année dernière, leur valeur a été de $121,858,344. Pendant cette période, les importations de fer et d'acier ont diminué des deux tiers. Ce résultat a été obtenu en payant (si l'on prend comme exemple une grande aciérie) $4 par jour pour la main-d'œuvre, y compris les ouvriers et les jeunes garçons. Les frais de fabrication de l'acier aux Etats-Unis ont été réduits au point d'être inférieurs aux frais de fabrication dans n'importe quel autre pays du monde. Selon toutes les probabilités, la demande pour l'acier ne tardera pas à se doubler ou quadrupler. Le pays qui a le plus de chances de fournir l'acier demandé, ou une grande partie de cet acier, est celui qui pourra le produire et le livrer au plus bas prix aux consommateurs étrangers.

Bien des négociants à l'étranger seront surpris d'apprendre que le meilleur acier brut est produit et vendu dans les usines américaines à un cent la livre et au-dessous. Ce prix est la conséquence de l'association des capitaux et de la prospérité. L'acier a été fabriqué et vendu pendant des années à trois-quarts d'un cent la livre, et avec bénéfice.

Pour ceux qui sont à la tête d'entreprises commerciales et manufacturières dans le monde entier, ce fait signifie que l'acier américain pénétrera dans des voies innombrables, et qu'avec l'acier à bon marché il se créera un développement et il s'établira un mouvement qui exigeront une très grande expansion de la faculté productrice de l'acier aux Etats-Unis.

L'acier américain étant le moins cher et, de l'avis unanime, le meilleur acier du monde, il s'ensuit que son emploi pour les machines de toute espèce diminuera le prix de revient de ces machines. Les fabricants américains n'ont pas encore appliqué leur énergie à la recherche du commerce du monde, mais ils se préparent à le faire. Bientôt ils auront le fret à bas prix sur l'océan, des représentants sur tous les marchés du monde et des marchandises exposées partout et offertes aux prix les plus bas qui peuvent laisser un bénéfice.

Bref, une nouvelle puissance, un facteur, une force ou une influence est en campagne. Une importante industrie, celle de la construction des navires, est née en Amérique. Les Américains ne perdent pas de vue la possibilité de faire du commerce dans toutes les parties du monde. Des préparatifs se font en vue d'un fort excédent. D'autre part, les besoins du monde augmentent et il peut ne pas y avoir d'excédent.

En d'autres termes, le monde, ses industries, son commerce, son négoce intérieur et les relations extérieures de tous ses peuples sont en voie de réorganisation et de remaniement. Les événements se succèdent rapidement. Le progrès est comme un volcan qui fait éruption. La pensée humaine a la vivacité de l'électricité. Les énergies se centralisent avec la force d'un ouragan. L'état de choses ancien disparait. L'aube va paraître et c'est à ceux qui sont à la tête du monde, d'aller à sa rencontre et de la saluer, prêts à agir.

Une des difficultés que les agents et les marchands d'instruments agricoles américains rencontrent dans leurs pays respectifs, consiste dans le préjugé des fermiers en faveur des instruments qui leur sont familiers depuis bien des générations. Ce n'est pas la un petit obstacle. La nature humaine est une singulière force. Elle a sa fierté, qu'on ne peut pas traiter durement. Il faut prendre des ménagements. Les instruments agricoles du vieux temps occupent une situation qu'on ne peut pas brusquement détruire, même lorsque le marchand sait avoir un instrument agricole américain supérieur sous tous les rapports et qui fera plus de besogne et la fera mieux. On a fait un grand pas lorsqu'une innovation est faite. Il y a beaucoup de cultivateurs qui sont tellement habitués à faire une certaine somme de travail chaque mois et chaque saison pour obtenir tel produit, qu'ils ne sont pas prompts à adopter quelque chose qui promet plus de résultats avec moins d'efforts. Des agents ont signalé cette particularité, mais heureusement elle n'est pas universelle. Il appartient au vendeur ou au marchand de faire ressorter les avantages résultant de l'emploi du meilleur instrument agricole, et de démontrer qu'une plus grande somme de bien-être et de progrés est à la portée de tous ceux qui se laissent induire à abandonner les vieux instruments jadis en honneur, pour prendre les nouvelles machines qui font gagner du temps.

Les négociants du monde entier découvriront sans aucun doute qu'ils peuvent faire plus d'affaires d'un caractère international, et les faire plus facilement et plus directement dès que les traités de commerce qui se préparent actuellement entre les principaux pays seront conclus. Le gouvernement des Etats-Unis pousse, tout particulièrement, avec diligence à la conclusion de nouveaux traités basés sur les nouvelles nécessités et facultés de production et de commerce qui demandent de plus vastes marchés à l'étranger. Le progrès industriel aux Etats-Unis, dans la Grande Bretagne, en Allemagne, en France, en Autriche et dans d'autres pays exige que la politique commerciale de chacun de ces pays soit établie sur une base nouvelle ou plus large. La plus importante mesure à l'étude est le traité Hay-Pauncefote, qui s'occupe des conditions dans lesquelles les intérêts de la Grande-Bretagne et des Etats-Unis seront le mieux servis en ouvrant une communication par eau entre les océans Atlantique and Pacifique. Une série de mesures moins importantes avec des gouvernements de moindre rang sont également à l'étude. Les gouvernements du monde entier se préparent à entretenir des relations plus étroites et plus nombreuses, avec moins d'esprit d'exclusion et plus de fraternité, à développer le commerce du monde et, nécessairement, à donner de l'expansion à tous les genres d'activité industrielle et agricole.

NOUVELLES INVENTIONS.

La rapidité dans l'accomplissemen travail est l'âme et la nécessité de l'agr ture moderne. Pour rester à la hauteu l'augmentation du travail, il faut des mo plus puissants. Pour obtenir ces mo supplémentaires, il faut combiner de velles inventions avec les nouveaux per tionnements déjà réalisés. L'emploi moyens plus puissants amènera natur ment l'augmentation de la culture et du veloppement de la terre. Ce qui, par donnera naissance au besoin d'avoir plus pièces et de nouvelles machines. Tout c nécessitera les services d'hommes exp mentés à la tête de tous les ateliers de p duction. Les maisons manufacturières am caines font face à toutes ces nécessité mesure qu'elles se présentent, elles les vancent même pour la plus grande par Le marchand étranger est celui qui tire le p grand avantage du fabricant exportant ses p duits, car c'est lui qui a droit au bénéfice c mercial provenant des meilleures et des dernières machines construites dans le d'être importées à l'étranger.

Les instruments agricoles américains mis sur les marchés étrangers pour conc avec ceux fabriqués ailleurs, non seulem à cause de leurs propres mérites, mais a afin d'engager les fermiers à en faire des e pratiques dans les champs. Lorsqu'une chine ou un instrument agricole quelconqu employé, il devrait profiter au fermier a qu'au marchand et au fabricant.

Une des raisons fondamentales du m reconnu des instruments agricoles am cains, qui sont accueillis si favorablement le monde entier, est que la plupart d'entre sont faits de pièces fabriquées par des chines dont le travail est infaillible et qui fabriquant mille ou dix mille pièces ou pa identiques, le font avec la plus complète formité. Il n'y a aucune possibilité de man d'attention, de négligence ou d'inadverta La main de l'homme pourrait faire un mouvement ou se fatiguer et laisser un ment de faiblesse s'introduire dans le trav mais la machine ne varie jamais, elle ne pe pas, elle ne fait jamais de faux mouvem c'est pourquoi les instruments agric américains sont ce qu'ils sont. Chaque pi est examinée et éprouvée, et lorsque les pièc sont assemblées elles représentent les me leurs matériaux, la plus grande habileté l'adaptation la plus parfaite. Ce système d fabrication exclut les défauts et la faibless Il stimule l'habileté en concentrant l'attentio sur un point. Il amène l'amélioration de machines pour fabriquer chaque pièce de l'instrument, et il en résulte que celui-ci, lorsqu'il arrive dans l'atelier de peinture pour y cevoir la dernière touche, est un triomph d'habileté mécanique et un symbole de per fection.

Comme les Etats-Unis sont aujourd'hui à l tête du monde entier pour la production d fer et de l'acier, les fabricants américai d'instruments agricoles ont un grand ava tage. Il est toujours plus économique po un fermier d'acheter sur les marchés où l matière première abonde et où elle est transformée sur le lieu même qui la produit.

LE COMMERCE DU MONDE.

Le désir de beaucoup de négociants européens de se renseigner plus complètement au sujet du résultat probable de la concurrence des Etats-Unis, par rapport au commerce et à la fabrication dans le monde entier, indique un prochain changement dans la nature du commerce entre les Européens et les Américains des Etats-Unis.

Le principe de protectionnisme, comme dans tous les pays, existe encore aux Etats-Unis, mais on peut voir aujourd'hui ses résultats, dans le monde entier, à l'augmentation croissante du commerce d'exportation. La force et l'énergie de la concurrence est aussi active et aussi puissante que dans les pays d'Europe, et sous beaucoup de rapports elle l'est davantage. Les moyens énormes et en progression constante de l'industrie aux Etats-Unis attirent l'attention inquiète du monde, et on en recherche la signification.

Si l'on considère les Etats-Unis au point de vue purement européen ou d'au-delà des mers, il y a plusieurs forces, conditions et raisons déterminantes dont les négociants et les marchands de tous les pays doivent prendre note.

Les Etats-Unis sont devenus, soudain, une des grandes forces du monde commercial. Leur système de tarif douanier et leur système monétaire, avec l'étalon d'or pour base, suivis d'une activité sans précédent dans la construction de navires, présentent aux négociants internationaux du monde,—c'est-à-dire aux exportateurs et aux importateurs—un problème qui indique une revision possible des relations commerciales. Avec les méthodes de production les moins coûteuses du monde entier, avec les tarifs de fret par chemin de fer les plus bas du monde et avec la main-d'œuvre la meilleur marché, si l'on calcule ce que produit un homme à l'aide des machines, les Etats-Unis offrent aux négociants du monde un problème qui mérite mieux qu'une étude éphémère.

Les associations industrielles constituent aux Etats-Unis un autre facteur. Les Américains eux-mêmes ne savent pas ce qu'elles signifient. Mais elles n'en existent pas moins, il y en a des centaines, représentant des milliers de millions de dollars et créées ostensiblement pour gagner plus d'argent qu'auparavant, au moyen de la lique des intérêts.

A toutes ces forces, que le négociant européen doit envisager, viennent s'ajouter les gigantesques associations de chemins de fer s'étendant de l'Atlantique au Pacifique, auxquels se relient et vont se relier des lignes de navires pour prolonger leur trafic à l'ouest vers les pays d'Orient et à l'est vers l'Europe et l'Extrême-Orient, jusqu'à ce qu'ils se rejoignent en embrassant le globe.

Avec leur vaste région du nord-ouest, cet énorme plateau producteur de blé, avec leur douzaines d'États sur le Golfe du Mexique (la plus grande région cotonnière de l'univers), avec leurs nombreuses fabriques de conserves de viandes, avec leur chaine de monts des Apalaches dont les flancs recèlent de riches veines de charbon exportable, avec leurs immenses gisements de minerais, propres à produire l'acier et qui fournissent l'acier le moins coûteux du monde entier, avec leurs combustibles solides, sous forme de charbon et de coke, liquides, comme le pétrole, et gazeux, comme le gaz naturel, avec leurs vastes étendues de forêts dont les lisières fournissent du bois de construction aux antipodes, et avec leurs machines dont la masse décuple la puissance mécanique productrice de toute leur population, les Etats-Unis possèdent des ressources, une énergie, une puissance et des moyens de production qui demandent comme champ d'action le monde entier.

C'est sur cette puissance ou faculté de produire, en grande partie encore à l'état latent, qu'on appelle l'étude attentive des importateurs et des exportateurs du monde. Il y a dix ans, cette puissance, cette faculté n'existait pas. Aujourd'hui elle existe. Ce n'est pas en qualité d'Américains mais comme citoyens de l'univers que nous nous demandons quelle direction prend cette nouvelle et puissante force. Ce nouveau facteur n'est pas un glaive pour renverser les trônes et faire œuvre de destruction, mais c'est une force muette qui fera pénétrer dans tous les pays, les palais et les hameaux son influence stimulante, civilisatrice et instructive. Il mettra aux pieds de l'Europe, de l'Asie, de l'Afrique, et du nouvel empire australien les meilleurs résultats de son génie. Ses flottes futures porteront les abondants produits de ses champs et de ses ateliers à tous ceux qui pourront en avoir besoin, non pas avec une pensée hostile, mais avec ce sentiment de dévouement à un idéal supérieur qui surgit dans l'esprit humain lorsqu'il accomplit de belles choses dans la voie du progrès de l'humanité.

Les fabricants américains ont à lutter dans leur pays même pour garder la première place. Ils se font l'un à l'autre une vive concurrence en s'efforçant d'approvisionner 75,000,000 de personnes, et leurs marchandises doivent atteindre le plus haut degré de supériorité pour pouvoir conserver leur position dans le commerce. Si les Américains, qui sont parfaitement fixés sur l'importance de l'emploi des meilleures machines et des meilleurs outils propres à économiser la main-d'œuvre, donnent leur clientèle à un fabricant, c'est une forte preuve de la bonne qualité de ses marchandises, car aucune classe de personnes ne quittera plus rapidement un fabricant, ou refusera ses marchandises s'il ne les fournit pas absolument conformes au type requis, que le fermier américain.

Le fermier européen qui donne sa clientèle aux fabricants américains peut le faire en sachant que leurs articles sont approuvés par les fermiers américains judicieux, que la qualité ne peut être surpassé, et que les prix seront de nature à le satisfaire. Par le fait, les fabricants américains ont le plus vif désir de faire connaitre leurs instruments agricoles, de façon à convaincre les marchands et les fermiers des pays étrangers de l'importance qu'il y a pour les fermiers dans tous les pays à employer les instruments de fabrication américaine. Les fermiers de tous les pays payent les impôts, reçoivent peu d'encouragements et sont forcés de vendre à des prix dont ils ne sont par les maitres; mais s'ils emploient de meilleurs instruments agricoles, et s'ils réalisent, sous le rapport de la main-d'œuvre, une grande économie dans les frais de production des récoltes, ils auront plus d'avantages, et leurs chances d'augmenter leurs bénéfices s'en trouveront accrues.

CHARIOTS AMÉRICAINS.

Après tout ce qu'on a dit à ceux qui emploient des chariots dans le monde entier sur les mérites des chariots américains il semblerait qu'il n'y a plus rien à dire qui vaille la peine d'être dit. A un point de vue cela est vrai, mais il ne faut pas en conclure que le perfectionnement dans la construction des chariots subit un temps d'arrêt. Une étude des travaux récents en chariots, dans les principaux ateliers des Etats-Unis, faite par des experts indique que les fabricants de chariots trouvent le moyen de mieux faire et de fabriquer mieux. Cette amélioration a eu pour stimulant, en premier lieu, les nécessités du pays même, et, en second lieu, la concurrence des fabricants de chariots dans d'autres pays pour le commerce avec l'étranger. La théorie de la meilleure construction des chariots a, peut-être, été épuisée, mais dans la pratique de la fabrication des chariots il y a place pour les suggestions d'une expérience nouvelle. Le développement des exploitations minières, du commerce urbain et de l'agriculture a fait demander des chariots pouvant transporter des charges plus considérables sans augmentation matérielle de poids ou de prix. La façon dont les fabricants américains de chariots ont répondu à cette demande mérite d'être appréciée. Cette appréciation n'a pas été longue à venir. Le gouvernement n'a pas été le dernier dans l'affaire; et pourtant ses exigences sont extrêmement sévères. C'est une satisfaction pour les fabricants de ces chariots perfectionnés que d'avoir répondu à toutes les demandes et à toutes les espérances. Le besoin de chariots pouvant porter des charges énormes sans tension excessive et sans vibration notable, a grandi fortement d'année en année. Les fabricants de chariots ont même devancé cette demande et, par le fait, ils ont appris à ceux qui en font usage sur place à mettre des chariots plus solides derrière leurs chevaux. Les rapports et les attestations de ceux qui ont employé ces chariots méritent d'attirer sérieusement l'attention des acheteurs de chariots à l'étranger.

On entend moins parler qu'il y a quelques années de préjugés contre ou de préférence pour un article de commerce parce qu'il a été fabriqué dans ce pays-ci ou dans celui-là. L'esprit cosmopolite se développe d'une façon remarquable. Il est vrai que les agriculteurs d'Allemagne cherchent à se protéger par certaines lois contre un ou plusieurs pays étrangers, mais ce n'est pas à cause d'un préjugé national. La population du monde commence à avoir une compréhension plus large de ce qu'exige l'économie politique éclairée. Le monde est notre marché, tel est partout le sentiment du négociant, du fabricant et du fermier. Personne ne peut savoir exactement où son produit finira par arriver après être sorti de ses mains.

Les agents qui représentent en Europe les peleuses à pommes américaines ne trouvent que des éloges à écrire à leurs maisons pour rendre compte des services que ces appareils rendent aux pâtissiers, hôteliers et autres clients, partout où on les achète. Les représentants de commerce européens trouveront profit à s'occuper de cet outil d'emploi précieux et de vente facile.

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OUTILS AGRICOLES À LA MAIN.

La maison Geneva Tool Co., de Geneva, Ohio, Etats-Unis, est la première maison de cette partie des Etats-Unis, à l'ouest de l'Ohio, s'occupant de la fabrication d'outils agricoles à la main.

L'assortiment fabriqué par cette maison comprend des fourches de toute espèce, comme fourches à foin, fourches à engrais, fourches à orge, fourches à coke, fourches à charbon, fourches à pierres, fourches à tan, fourches à minerai, fourches à écluses, fourches d'écurie, fourches à poisson, fourches à betteraves, fourches pour routes, fourches pour presses à emballer, etc., par le fait, des fourches pour tous les usages.

En fait de houes, la maison en fabrique pour les champs, pour le jardin, pour le sarclage, pour le coton, pour la rue et pour le mortier, de tous les modèles désirés.

Elle fabrique également des râteaux pour jardin et pelouse, des râteaux à foin et à grain, des râteaux à asphalte, pour la route, le charbon et le sable; aussi des arrache-pommes de terre, des crocs à engrais, des crochets à pierres, des instruments à déterrer les clovisses, des arrache-bardane, des outils à nettoyer les trottoirs, des assortiments d'instruments de jardinage, des outils pour betterave à sucre, des râteaux à cheval pour le foin, des charrues genre pelle, des binettes, des manches de faux à gazon et à broussailles, des manches d'outils, etc.

Ce qui précède indique la grande variété d'outils à la main fabriqués par la maison Geneva Tool Co. Sa fabrique est située sur deux grandes lignes de chemins de fer; par suite, elle a des facilités d'expédition sans égales, aussi bien vers le bord de la mer que vers d'autres points. Elle est également à proximité des grands centres du fer et de l'acier aux Etats-Unis et dans le voisinage immédiat de la plus belle espèce de frêne blanc de seconde pousse qu'on puisse se procurer n'importe où, et près aussi de vastes gisements de charbon.

Nous publions à la page 48 un dessin représentant cette fabrique, qui a été agrandie depuis que le dessin est fait. La superficie actuelle des différents étages des ateliers et des magasins est d'environ 180,000 pieds carrés. Plus de 1,800,000 fourches, houes, râteaux, crocs, etc., y sont fabriqués et vendus chaque année, ainsi que 120,000 manches de faux, et plus de 2,000,000 manches d'outils. La maison emploie 300 hommes toute l'année, et la direction est entre les mains de personnes qui ont consacré des années d'expérience à la fabrication et au perfectionnement des outils à la main. La maison possède également à Paducah, Kentucky, Etats-Unis, une fabrique succursale servant exclusivement à la fabrication des manches d'outils.

La maison vend ses articles non seulement partout aux Etats-Unis, mais elle en exporte également à l'Europe continentale, la Grande-Bretagne, le Canada, le Mexique, l'Amérique du Sud, l'Amérique centrale, l'Afrique du Sud, l'Australie et le Japon.

La maison Geneva Tool Co. donne des soins particuliers à l'expédition et l'emballage convenables des marchandises pour les pays étrangers. Son bureau d'exportation est entre les mains d'hommes choisis en raison de leur expérience et de leurs capacites, et qui savent parfaitement mener le commerce si rapidement croissant de la maison à l'étranger, dont le premier devoir est le soin et la promptitude dans l'exécution de toutes les commandes.

Le nouveau et grand catalogue bien illustré de la maison (No. 55) qui vient de paraitre pour 1901, est prêt à être distribué et il sera adressé à ceux qui en feront la demande. La maison a la prétention de fabriquer les plus beaux et les meilleurs articles offerts au commerce, à des prix toujours équitables. Les articles marqués "Geneva" sont des articles types, et on peut toujours compter qu'ils donneront pleine satisfaction.

LES INSTRUMENTS "TRANCHEURS" DE LA MAISON CLARK.

Les instruments "trancheurs" Clark sont fabriqués uniquement par la maison Cutaway Harrow Co., de Higganum, Connecticut, Etats-Unis. Ces instruments se trouvent depuis si longtemps sur le marché et on les a tellement annoncés qu'ils sont connus de presque tous les fermiers amis du progrès. Les lames de tous les outils fabriqués par la maison sont faites de l'acier de coutellerie le plus fin. Ses herses et ses charrues à disques sont fabriquées de la dimension voulue pour convenir aux exigences particulières de la récolte ou aux conditions spéciales du sol. Ce sont, en réalité, des instruments dans lesquels sont combinées la herse et la charrue, qui feront le double de travail dans une seule et même opération et rendront dans les champs tous les services désirés par les cultivateurs de légumes et de fruits, pour le service ordinaire de la ferme ou celui de la plantation, pour les champs de coton, les plantations de fruits ou les champs de blé. Ces instruments sont également bons pour le versant de colline ou la plaine; ils accomplissent le travail mieux, et de cinq à dix fois plus vite que les anciens procédés. Tous ceux qui les emploient envoient des attestations volontaires de leur mérite. On les a employés sur une grande échelle dans tous le pays étrangers, spécialement en Australie, en Nouvelle-Zélande et dans tous les pays où l'on fait pousser le grain.

On a reconnu que, partout où les instruments "trancheurs" Clark ont été employés pour une récolte quelconque, un rendement supérieur de 15 à 20 pour cent a été obtenu par leur emploi. Cette précieuse faculte d'adaptation de ces outils à tous les services, a été obtenue grâce non seulement aux longues années d'experimentation et aux essais effectifs sur le terrain de M. Clark, mais aussi à ses grands voyages et aux observations qu'il a faites dans tous les Etats de l'Union américaine; par le fait, il a parcouru tout le continent américain, voyant par lui-meme les véritables nécessités résultant de l'état du sol et guidé par les suggestions des planteurs et des fermiers sur leur propre terrain. C'est à son expérience qu'est due la tête extensible, pouvant se renverser, telle qu'elle se trouve dans les herses "Californie" et les herses à tête extensible, fabriquées pour passer sous les branches basses et remuer le sol du verger sans abîmer les arbres.

Les charrues polysocs et semoirs combinés sont d'excellents semoirs à grains ou charrues; ils peuvent ensemencer, dans un seul trajet, une bande de terrain ayant jusqu'à 6 pieds de large, en grain ou en pois du Sud. Les charrues à disques et à siège allègent considérablement le travail de la charrue ordinaire à traction. Les instruments "trancheurs" pour les champs de coton et le service des champs en général économisent beaucoup d'argent. La maison fabrique également des coupe-racines "Clark" et des herses à aplanir "Clark" pour herser et niveler les champs et les pelouses. [illegible] instruments, ainsi que la presse à tabac "Samson," font excessivement bien le travail auquel ils sont destinés.

Toutes ces machines sont garanties de qua- tabac "Samson," font excessivement bien le travail [illegible] autre machine analogue [illegible] Ces herses et ces charrues [illegible] dimensions et de [illegible] variée de travail [illegible] ceux qui les emploient [illegible] pour en avoir une connaissance détaillée, nous recommandons à tous les marchands d'écrire à la maison pour demander le catalogue contenant la description de tous ces instruments.

La réputation de ces articles est telle que, partout où ils ont été présentés, que ce soit en Europe ou en Amérique ou dans n'importe quelle autre partie du globe, ils se vendent toujours rapidement.

RÉDUCTION DES TAUX DE FRET.

Le commerce des Etats-Unis avec certains marchés européens va être considérablement augmenté par la construction de quelque mode meilleur d'amener sur la côte les marchandises venant de l'intérieur du pays. Avec la construction d'un canal pour des chalands, allant des grands lacs de l'intérieur à la rivière du Hudson, et de là à New York, un grand progrès sera réalisé. Le vieux canal, qui, dans son temps, a été un facteur si puissant dans le développement de New York, est aujourd'hui insuffisant. On doit mettre au vote, l'automne prochain, la construction d'un canal pour chalands coûtant $62,000,000, et environ 1,000,000 de suffrages des voteurs de l'Etat de New York s'exprimeront en faveur ou contre ce canal. C'est une mesure nationale, qui dépend du vote de la population d'un État sur quarante-cinq.

Le besoin de facilités meilleures, plus grandes et à meilleur marché, est tellement pressant qu'il en est résulté la mise en avant d'une autre mesure, tendant à la construction d'un chemin de fer pour le transport du fret à travers l'Etat de New York, qui coûterait $20,000 par mille à établir, et qui, avec tout le matérial et l'outillage nécessaires, exigerait une dépense d'environ $50,000,000. Cette ligne serait probablement pourvue de rails pesant 100 livres par yard de longueur, avec des locomotives du poids de 100 tonnes, remorquant des wagons pouvant porter des charges de 100,000 livres.

Nos amis d'Europe et des autres pays étrangers peuvent être sûrs d'une chose, c'est que le peuple américain aura vers la côte un débouché moins coûteux, par le fait le moins coûteux possible. Il est possible que l'on passe par le canal Welland et en descendant le Saint-Laurent, ou par un canal à chalands profond, ou bien par un chemin de fer à transporter le fret, mais l'existence d'une voie de débouché moins coûteuse est prochaine, et, lorsqu'elle existera, les liens entre l'Europe et l'Amerique seront encore plus resserrés.

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El dollar equivale á más ó menos cinco francos ó pesetas. Un kilogramo representa más ó menos dos libras inglesas y un quinto.

Los comerciantes extranjeros que nos escriben pidiendo informes respecto de máquinas y aperos, podrían enviarnos diseños de los artículos que desean, en cuanto sea posible, para poder servirlos mejor.

Todos los fabricantes exportadores norteamericanos, tienen el cuidado de conseguir los fletes más baratos, y están obligados á proceder de esa manera para economizar al comprador todos los gastos que sea posible.

No se debe nunca descuidar el enviar todos los pormenores más completos respecto de las vias por donde han de ser enviados los artículos. Con unas cuantas instrucciones pormenorizadas, se economizarán tiempo é innecesarias demoras.

Los exportadores norteamericanos han dedicado especial atención al mejor método de embalaje. Pero sería preferible que todos los que encargan aperos norteamericanos, dieran informes acerca de la manera en que desean que se embalen sus mercancías.

Los comerciantes y vendedores que compran artículos norteamericanos por medio de casas de comisión debieran al propio tiempo escribirle al fabricante, lo cual no está de más para estar seguros de recibir los artículos que realmente han encargado y nó ninguno otro.

Comprar un apero pesado, que necesite dos ó tres caballos para arrastrarlo con un caballo de refuerzo para el trabajo efectivo, es perder su dinero. El peso cuesta demasiado. El acero da ligereza á la par que fuerza. Las mejoras sucesivas, han eliminado todas las piezas innecesarias de las máquinas.

Los directores eminentemente prácticos de las fábricas norteamericanas de aperos y maquinarias agrícolas, no economizan experimento, ni gasto, para lograr la fabricación de los artículos más perfectos, que con razón tengan mejor venta, que duren más y trabajen á mayor satisfacción de sus dueños.

El constante desarrollo de las exportaciones en los Estados Unidos no excede la demanda de maquinarias fabricadas en este país. Es natural pues que la creciente demanda de maquinarias agricolas venida de todos los países del mundo, sostenga las exportaciones de estos artículos, con marcada tendencia á aumentar.

Los ferrocarriles van ahora desde las principales ciudades de los Estados Unidos hasta la ciudad de México. También está el Canadá perfectamente comunicado por rieles con los Estados Unidos, y acaso sorprenderá al lector europeo saber que estos tres paises tienen el mismo precio de estampilla para sus comunicaciones postales, que es el mismo que para el interior de cada país.

Los que toman nota de las exportaciones norteamericanas, no dejarán de tener en cuenta, la gran cantidad de carretas de mano exportadas de este país. Las carretillas de mano norteamericanas, están bien construidas, de una madera que resiste á todos los climas y sirven para toda clase de servicio. También están hechas de hierro y acero, todo lo cual indica que en toda la extensión de este pais, se fabrica una enorme cantidad de carretillas de mano. Algunos fabricantes norteamericanos de carretillas, han introducido recientemente algunas mejoras, que consideran muy superiores.

Son muchos los países que buscan ayuda en los Estados Unidos, con muy buenos resultados, para su agricultura. Se consultan con más frecuencia los catálogos norteamericanos. Las empresas agrícolas se aprecian por la parte que en éllas puedan tener las maquinarias. La diferencia entre los métodos modernos de agricultura y los antiguos, están de manifiesto en todas partes. Las ventajas de las mejores maquinarias, sirven de estímulo á múchos, que hasta ahora habian trabajado sin ellas, procurando en vano alcanzar tan eficaz resultado. De varias partes del mundo vienen informes de una futura demanda de aparatos perfeccionados.

Los vendedores de aperos de los Estados Unidos, están perfectamente organizados en algunos de los Estados y celebran reuniones anuales. Ellos tienen comités que dirimen todas las desavenencias entre vendedores y fabricantes. También están organizados los fabricantes, y ambas organizaciones tienen gran número de miembros. Cada una de estas asociaciones envia delegados que asisten á las reuniones de la otra, y ambas trabajan en perfecta armonía. Sólo los fabricantes más honorables pueden ser recibidos en la Asociación Nacional de Fabricantes, y ningún detallate espurio, puede entrar en asociación de detallantes. Ambas sociedades procuran proteger su comercio así en el interior como en el exterior, dando por resultado que los aperos norteamericanos han de ser incuestionablemente de la mejor calidad.

Las estadísticas que acaba de publicar el gobierno norteamericano para el año de 1900, indican que el comercio extranjero ha sido de $2,307,102,970, que excede en $232,667,589 el de 1899. El valor de las exportaciones fué de $1,478,050,854, ó sea un excedente de más de $202,582,883 sobre 1899. Las importaciones fueron de $829,052,116 ó sea $30,084,706 más que en 1899.

El balance del comercio en el año de 1900 fué de $648,998,738 ó sea un aumento de $172,498,177 sobre 1899.

Estos guarismos encierran en si su lección y manifiestan su moraleja. El desarrollo industrial de los Estados Unidos está en su infancia. Dentro de un año, una gran flota de vapores intercontinentales vendra á aumentar aún nuestras facilidades comeciales, y las cabezas de esas líneas, situadas en veinte puertos más ó menos, estarán perfectamente preparadas para ese comercio. Los hombres de nogocios de los Estados Unidos, se están disponiendo para abarcar el comercio del mundo.

Las exportaciones de mercancias en general, con destino á Londres y Liverpool, en la última semana de Diciembre, tomada como ejemplo de exportaciones en una sola semana, alcanzaron á $3,512,640, guarismo que por sí sólo habla más alto para el comerciante europeo, que todo lo que se queda decir á favor de la pujanza exportiva de los Estados Unidos. Este hecho demuestra el buen sentido que consiste en consultar primero á los Estados Unidos con respecto á lo que se les pueda comprar en condiciones iguales, ó acaso más ventajosas que en otra parte. Los fabricantes de aperos de los Estados Unidos, están resueltos á sobresalir en aquellos articulos en que aún no lo hayan alcanzado. En este pais se reconocen las fuerzas con que habrá que luchar en Inglaterra y Alemania con respecto á maestría, precios y habilidad comercial. El comercio de exportación de los Estados Unidos puede sostener la cuidadosa investigación de todos los comerciantes, y en especial la de los comerciantes de aperos y maquinarias agricolas del mundo

La relación entre azúcar de remolacha y la agricultura en Europa, se hace de día en día más interesante. La proporción entre la cantidad de aperos y maquinarias agricolas que allí necesitan, comparándola con otros productos agrícolas, da á conocer algunos resultados harto interesantes que Europa está apuntando. La industria, actualmente en la infancia, se esta extendiendo al mundo entero, y una de las razones es que la caña de azúcar no puede ser cultivada más allá del cuadragésimo paralelo de latitud, al paso que la remolacha prospera en regiones tan altas como el sexagésimo paralelo de latitud. La producción de azúcar de remolacha en toda la Europa alcanza á 5,500,000 toneladas, al paso que 73,000 toneladas es toda la producción actual de los Estados Unidos. Rusia es la que más produce de todo Europa, luego viene Alemania con 400 manufacturas de azúcar en bruto y 150 refinerías. La Isla de Cuba tiene 230 ingenios de azúcar. El cultivo de la remolacha se está actualmente extendiendo con paso rápido, y requiere el cultivo intensivo, que anualmente viene á ser una fuente de riqueza y de agradable ocupación, para gran número de gente.

EL HIERRO Y EL ACERO NORTEAMERICANOS.

Los lectores de este periódico en todos los países del mundo, puede ser que no tengan un concepto adecuado de la relación que existe entre los Estados Unidos y las demás naciones, respecto á la industria del acero, á menos que hayan hecho un esfuerzo especial para tenerse al corriente de dicha cuestión. Como una evidencia de los progresos efectuados en la producción de acero, las estadísticas de las exportaciones en el año de 1880 dan un valor de $14,716,524. El año pasado su valor fué de $121,858,344. En ese lapso, han disminuido las importaciones de hierro y de acero en dos terceras partes. Este resultado se ha alcanzado (tomando como ejemplo el de una gran fábrica), pagando $4 por dia de trabajo, incluyendo el trabajo de los obreros y de aprendices. El costo de fabricación del acero en los Estados Unidos, ha sido reducido á menos de lo que cuesta en todos los demás países del mundo La demanda de acero habrá de duplicarse y cuadruplicarse muy en breve. El país que tiene las mayores probabilidades de ser preferido para el abastecimiento de dicho artículo, no puede ser sino aquel que pueda producir dicho artículo, para entregarlo al consumidor extranjero, al más ínfimo costo.

Acaso les cause extrañeza á los comerciantes del extranjero, saber que el mejor acero en bruto es producido por fábricas norteamericanas, y puesto en venta, á un centavo por libra y hasta menos. Este precio es el resultado de la asociación y de la prosperidad. Hace muchos años que se hace y se pone en venta por el precio de tres cuartos de centavo por libra, con buena utilidad.

El significado de esto, para los principales comerciantes y manufactureros en toda la extensión del globo, es que el acero norteamericano será utilizado por multitud de empresas, y que, con el acero barato, se iniciará un movimiento que no dejará de estimular una gran demanda de acero norteamericano, causando una gran expansión de producción en este país.

En posesión del acero más barato é incontestablemente el mejor del mundo, se sigue que su uso en la maquinarias de todas clases abaratará el costo de éstas. Los fabricantes norteamericanos aún no han dirijido sus energías hacia la conquista del comercio del mundo, pero se están preparando para ello. Pronto tendrán fletes marítimos baratos, representantes en todos los mercados del mundo, y muestrarios de mercancias ofrecidas á los precios más baratos que se puedan dar sin perder.

En resumen, una nueva potencia, ó factor, ó agente, se presenta en la palestra. Una gran industria se está revelando también en este país para la construcción de buques. Los ojos de los norteamericanos se están abriendo, porque ellos consideran que pueden competir en el comercio con todos los países del mundo, y se están preparando para suplir todas las demandas. Por otra parte, están creciendo las necesidades del mundo y bien puede ser que todas las provisiones sean aún escasas.

En otros términos, las industrias, las relaciones comerciales internas y externas del mundo, se están reorganizando sobre nuevas bases. Los desarrollos toman proporciones de volcán, el pensamiento humano tiene la actividad de la electricidad. La energía se centraliza con fuerza de ciclón. Las rutinas pasadas se abandonan. La nueva era industrial es saludada y victoriada por los industriales del mundo, apercibidos para la acción.

Cuando se manifiestan los méritos reales de una máquina es cuando empieza á estar usada, porque todas las máquinas son buenas cuando están nuevas. Es cuando llega el período de las descomposiciones, de las quebraduras y del desgaste, cuando desea el agricultor estudiar su máquina. La ciencia del mecánico consiste en hacer las máquinas de manera que sus piezas se gasten con igualdad. De qué sirve una máquina que debiera durar diez años, si por causa de defectos en algunas piězas, estas están gastadas al cabo de tres años, y necesitan reposiciones. Precisamente el lado característico del apero norteamericano es ser una creación armoniosa. Cada una de sus piezas está en perfecta conexión con las demás, y, cuando están reunidas, hay perfecta armonía entre ellas. La fricción está reducida á su más mínima expresión. No se exije de ellas ningún esfuerzo innecesario ó que se pueda evitar. De cada pieza se exije unicamente lo que le corresponde; de ahi la calidad de duración, que distingue al apero norteamericano, y es por esta razón que cuando el apero está viejo, permanece aún virtualmente nuevo, y sigue trabajando; este hecho está comprobado, y las herramientas sometidas á prueba en Europa, lo han puesto en relieve. Esta condición compensa ampliamente la diferencia que pueda haber en los precios. El verdadero valor de un apero está determinado por el lapso de tiempo en que trabaja bien. Este punto de vista no siempre se tiene en cuenta por los agentes y vendedores de aperos norteamericanos. Muchas son las marcas que no dan lo que se debieran, y el dueño se olvida de contar el tiempo que sólo han durado. Ahora bien, los aperos americanos no temen competencia, si se considera su larga duración.

Una de las dificultades que los agentes y vendedores de aperos norteamericanos hallan en sus respectivos países, es la preocupación que tiende á favorecer aquella especie de aperos que ha venido el agricultor usando años há, y con el cual está familiarizado desde varias generaciones. No es este obstáculo de poca monta. Pero tal es la naturaleza humana. Ella tiene sus preocupaciones y errores, y bien que sea una buena obra sacar de ellos á los que los siguen, es empero necesario no contrariarlos sino con suma dulzura, porque nada podrá rendir el amor propio herido. Los aperos del tiempo de María Castaña tienen muy fuertes raíces para que se les pueda arrancar así no más, aunque el vendedor tenga la seguridad de la infinita superioridad de los aperos americanos, ora en el rendimiento de trabajo, ora en su calidad. Se ha logrado mucho cuando se ha conseguido introducir una innovación, porque no son pocos los labradores que se han acostumbrado de tal suerte á gastar una suma dada de trabajo, para producir en cambio una cantidad dada de productos, que no es fácil hacerlos salir de sus casillas para adoptar algo que les habrá de producir cosechas mayores con menor suma de trabajo. Algunos agentes han señalado esta particularidad, pero afortunadamente no son los más Toca al vendedor ó comerciante indicar las ventajas que se obtienen con el uso del mejor apero, y demostrar asimismo la comodidad y el progreso que están en la mano de todos aquellos que se deciden á abandonar los instrumentos antiguos que eran como el emblema del labor, para reemplazarlos por los modernos que representan economía de tiempo.

Los comerciantes del mundo sin duda que han de descubrir que ellos podrán hacer más negocios de carácter internacional, y con más facilidad y más directamente, tan luego como los tratados de comercio que ahora se están haciendo entre las principales naciones, estén sancionados. El gobierno de los Estados Unidos especialmente está industriosamente procurando la creación de nuevos tratados basados en las nuevas necesidades, y facilidades de producción, que claman por nuevos mercados. El progreso industrial en los Estados Unidos, la Gran Bretaña, Alemania, Francia, Austria y otros paises requiere que la politica comercial de cada país se edifique sobre bases nuevas y más liberales. La más importante medida que se está actualmente considerando, es el tratado Hay-Pauncefote, que refiere á las condiciones en que mejor servidos han de quedar los intereses de la Gran Bretaña y de los Estados Unidos, al abrirse el canal entre el Atlántico y el Pacifico. Cierto número de medidas, de menor importancia, con Gobiernos de menor cuantia, están igualmente en consideración. Los Gobiernos del mundo están ahora preparándose para estrechar sus relaciones comerciales, para excluir el exclusivismo, para darle más aúge á la fraternidad, para aumentar el comercio del mundo y necesariamente la expansión de todas las clases de maquinarias agrícolas, y para estimular la actividad industrial.

No se habla ya tánto respecto de las preocupaciones contra ó á favor de algunos artículos, por ser hechos en el extranjero. Está creciendo el cosmopolitismo. Verdad es que los agricultores alemanes tratan de protegerse por cierta anhelada legislación, contra uno ó más países extranjeros, pero esto no obedece á ninguna preocupación de nacionalismo, porque una más liberal inteligencia de lo que requiere la economía política bien entendida, está abriéndose camino en el mundo. El mundo es nuestro mercado, tal es el sentimiento del mercader, del fabricante y del agricultor en todas partes. Nadie puede estar seguro del país á donde será exportado su artículo, luego que ha salido de sus manos. La ley de la demanda se apoderará de él y llegará hasta los confines más apartados del mundo.

EL COMERCIO DEL MUNDO.

Hay un deseo manifestado, por varios comerciantes europeos, de enterarse por si mismos, de las condiciones futuras de competencia entre los Estados Unidos y el resto del mundo, con respecto al comercio y á la industria; ésto indica un próximo cambio en el espíritu de las relaciones comerciales entre los europeos y los norteamericanos.

El principio de la protección existe aún en los Estados Unidos, como en otros países, pero sus resultados se están empezando á manifestar en todo el mundo por un aumento de las exportaciones. La fuerza y energía de la competencia es aquí tan activa y poderosa, como en los países europeos, y aún más por varios respectos. Su enorme y siempre creciente producción de artefactos, no ha dejado de llamar la solícita atención del mundo, y éste ha procurado indagar el por qué.

Si se consideran los Estados Unidos unicamente desde el punto de vista meramente europeo ó transatlántico, existen varias fuerzas, condiciones y agentes, que han de tener en cuenta los comerciantes y vendedores de todos los países.

De pronto se han colocado los Estados Unidos entre las tres primeras potencias comerciales del mundo, es decir que éstas son hoy día, Inglaterra, Alemania y los Estados Unidos. Su sistema arancelario y su base monetaria, que es el oro, juntamente con una actividad nunca vista en la construcción de navíos, presentan un ejemplo á los comerciantes internacionales del mundo que se ocupan de exportaciones é importaciones, que dará por resultado una probable revisión de las relaciones comerciales. Con los métodos más baratos de producción del mundo, con fletes ferrocarrileros más baratos, y con una mano de obra más económica, y con la ayuda de maquinarias además, presentan los Estados Unidos, á los comerciantes del mundo, un ejemplo que merece algo más que un estudio pasajero.

Otro factor poderoso, es su sistema de asociación industrial. Los mismos norteamericanos no saben lo que vale. Pero hay algunos centenares de éllos, que representan millares de millones de dollars, creados ostensiblemente para hacer más dinero que ántes, por medio de la asociación.

Agréguese á esto, las colosales sociedades ferrocarrileras, que se extienden de uno á otro oceano, de las cuales dependen líneas de vapores existentes ó en construcción, para llevar las mercaderias hacia el Oeste á los países de Oriente, y hacia el Este á Europa y al Extremo Oriente, abarcando al fin el mundo entero.

Sus grandes mesetas interiores del Noroeste, productoras de trigo, sus inmensas posesiones del Golfo (la más extensa región algodonera del mundo), su cadena de manufacturas de carne conservada, su cadena de montañas Apalaches, que encierran ricas vetas de carbón exportable, sus grandes depósitos de minas, productoras de acero, que suministran el acero más barato del mundo, sus combustibles, ora sólidos en forma de carbón y de coke, ora líquidos en forma de petroleo, ora gasosos en forma de gas natural, con sus vastos bosques, cuya madera se exporta hasta los antipodas, sus maquinarias que multiplican por diez la fuerza mecánica de su población total; todo esto constituye como resultante un agente de energía, fuerza y capacidad que requiere como campo de acción el mundo entero.

Es en esta fuerza ó capacidad, en gran parte latente aún, que debe fijarse la atención de los importadores y exportadores del mundo. Este poder y esta capacidad, no existían hace diez años. No es pues como norteamericanos sino como ciudadanos del mundo que preguntamos en qué dirección habrá de dirijirse esta nueva y poderosa energía. Este nuevo factor no es por cierto un sable que derroque tronos ni destruya pueblos, pero si es una potencia silenciosa que penetrará en todos los países, palacios y aldeas con su influencia estimulante, á la par que civilizadora y educacionista. Ella colocará á los piés de Europa, Asia, Africa y el nuevo imperio Australiano, los mejores productos de su genio. Sus futuras flotas llevarán la abundancia de sus campos y almacenes á todos los que los necesiten, no con un pensamiento hostil, sino con el de un alto ideal que se presenta al espíritu del hombre, cuando éste alcanza grandes resultados en el camino del desarrollo humano.

CARROS NORTEAMERICANOS.

Después de todo cuanto se ha dicho á los que emplean carros en todos los países del mundo, respecto de los méritos de los carros norteamericanos, pareceria que no hay más nada que agregar á lo que anteriormente se ha dicho. Esto en un sentido resulta cierto, pero no se debe de ello inferir, que las mejoras en la construcción de carros hayan llegado á una meta de que no puedan pasar. Un estudio de la obra reciente de fabricación de carros pos los talleres más acreditados de los Estados Unidos, hecho por peritos en esta clase de obras, pone de manifiesto que los fabricantes de carros están abriéndose camino hacia el perfeccionamiento de sus artículos. El estimulo para mejorar sus manufacturas, les viene de las necesidades domésticas, en primer término, y luego por la competencia que les hacen los fabricantes de carros de otros países. La teoría para la construcción de la mejor clase de carros, es al parecer inmejorable, mas en la práctica hay aún margen para experimentar nuevas sujestiones. El desarrollo de la mineria, del comercio urbano y de la agricultura, han creado una demanda de carros de capacidad mayor, sin aumento material en peso y costo. Y merece que se reconozca el sistema que han empleado los constructores norteamericanos, para alcanzar este resultado. Dicho reconocimiento no ha tardado en hacerse, no siendo el gobierno el último que procediera en ese sentido, y sus especificaciones son de las más probantes. Es satisfactorio para estos constructores de carros, el haber satisfecho todas las demandas y esperanzas. La necesidad de carros que puedan llevar una carga enorme sin sufrir y sin vibraciones de consideración, ha ido en aumento todos los años. Los fabricantes de carros se han anticipado á la demanda, y, de hecho, han enseñado á los carreteros de este pais las ventajas de enganchar carros sólidos á sus caballos. Las alabanzas y testimonios de los que aquí usan estos carros, son dignos de llamar la atención de los compradores del estranjero.

NUEVAS INVENCIONES.

Trabajo rápido es lo que constituye la vida de la agricultura moderna, y para dar abasto al aumento de trabajo, es menester mayor cantidad de fuerza motriz. Para adquirir esta fuerza adicional, es preciso adaptar nuevos apéndices á los aparatos modernos. El uso de más fuerza motriz producirá naturalmente mejor y más extenso cultivo de la tierra. Este incremento á su vez, producirá más demanda de apéndices y maquinarias nuevas. Todo esto requiere la asistencia de hombres expertos, á la cabeza de los talleres de producción de maquinarias. Las fábricas norteamericanas proveen á todas estas necesidades á medida que ellas aparecen y hasta, á las veces, las prevén. El comerciante extranjero en aperos, es el más interesado en la importación de maquinarias, como que él es el que más aprovecha con menor trabajo, las muy legítimas utilidades que produce la venta de las maquinarias agrícolas, destinadas á la exportación.

Los fabricantes norteamericanos se ven obligados á luchar en su propio pais, para mantener su posición en primer término. Ellos compiten á brazo partido entre sí, para abastecer una población de más de 75,000,000 de habitantes, y sus artículos han de ser de primera clase, para sostener la concurrencia de sus propios paisanos. Ahora bien, si los norteamericanos, que están en tales favorables condiciones para poder juzgar, acostumbrados además al empleo de las mejoes maquinarias y herramientas para economizar trabajo, juzgan digno de patrocinio á un fabricante, es pues evidente que sus artículos son de primer orden, porque en ningún otro país se sacrifica tan rapidamente á un fabricante, ó se rechazan sus artículos, si estos no están completamente fabricados por el modelo que priva.

El agricultor europeo que patrocina á los fabricantes norteamericanos lo hace porque sabe que sus articulos tienen la aprobación de los agricultores norteamericanos, y que ni su calidad puede ser mejor, ni más satisfactorio su precio. De hecho, los fabricantes norteamericanos tienen el mayor deseo de introducir sus aperos en el extranjero, para que, sometidos á prueba, puedan convencerse los agricultores y los comerciantes en esos artículos de lo mucho que importa para los agricultores de cualquier país servirse de tan útiles maquinarias. Los agricultores de todos los países, bien que pagan los impuestos, reciben en cambio poco estímulo y vénse obligados á vender á precios que no les remuneran; mas con el uso de mejores máquinas y la consiguiente economía de mano de obra, que habrá de agregarse á la utilidad, este marasmo desaparece, para dar lugar á utilidades nada despreciables.

HERRAMIENTAS AGRÍCOLAS.

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El nuevo y extenso catálogo lujosamente ilustrado, No. 55, que acaba de darse á la estampa para 1901, está ya listo para ser distribuido y será enviado á las personas que lo deseen y lo pidan. Allí están comprendidos los mejores artículos que se han presentado en venta, con precios siempre equitativos. Los artículos que llevan la marca "Geneva," son todos modelos especiales y la confianza que se tenga en ellos, no sufrirá decepciones.

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Se ha notado que donde quiera que se usan las herramientas tronchadoras de Clark, para cualquier clase de fruto, éste ha alcanzado un aumento en la producción de 15 á 20 por ciento. Estas sabias adaptaciones, no sólo han sido adoptadas después de largos años de experimentos y pruebas, en las heredades del Sr. Clark, sino que por sus largos viajes y sus observaciones han abarcado todos los Estados de la Unión; de hecho, se han practicado dichos experimentos en todo el continente americano, anotando las necesisades de las distintas clases de suelos, y teniendo en cuenta los consejos de los agricultores y labradores en su propio terreno. De todos estos experimentos se han originado los rastrillos de cabeza de extensión reversible, como los requieren en California, y los rastrillos de cabezea extensa, cuyo objeto es que alcancen más abajo de las orillas inferiores para remover el subsuelo del verjel sin dañar los árboles.

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FLETES MÁS BARATOS.

El comercio de los Estados Unidos con ciertos mercados europeos, habrá de tomar grandes creces por la realización de nuevos y mejores métodos para llegar al litoral. Un canal para navegación menuda, entre los grandes lagos del interior y el Hudson, comunicando de esa manera con Nueva York, sería un gran adelanto. El canal viejo que tan señalados servicios ha prestado en el progreso y la edificación de Nueva York, es ya insuficiente. Un nuevo canal interior, con un costo de $62,000,000, será votado el próximo otoño. Cosa de un millón de votos intervendrán en pro ó en contra del proyecto, en el Estado de Nueva York. Es ésta una medida nacional, que depende del voto del pueblo de un solo Estado de los cuarenta y cinco que la Unión comprende.

La necesidad de vías de comunicación más amplias y baratas es tan urgente que se está tomando en consideración otra medida, que se refiere á la construcción de un ferrocarril para carga, el cual ha de cruzar el Estado de Nueva York, y costará $20,000 por milla, y con todo su equipo necesario, nesesitará un desembolso de $50,000,000. Este ferrocarril probablemente tendrá rieles que pesarán 100 libras por yarda, y las locomotoras serán de 100 toneladas cada una, para arrastrar wagones de 100,000 libras de capacidad.

Pueden nuestros amigos de Europa y de otros países tener la confianza que el flete ha de abaratarse en lo futuro, hasta el mayor extremo, con muy poca margen encima del costo. Podrá hacerse el tráfico por el Canal Welland, bajando el río San Lorenzo, ó por medio de un canal interior de aguas profundas, ó por un ferrocarril para carga; pero lo cierto es que se está tratando de escoger el medio de transporte más barato, y cuando esto se realice, podrán Europa y Norte América estar más unidas, respecto al comercio.

Los aperos norteamericanos figuran en los mercados extranjeros con el solo objeto de competir con los de otras fábricas, no sólo por sus méritos, sino también con el fin de invitar á todos los agricultores á que los prueben practicamente en sus tierras. Un apero puesto en uso reporta igual beneficio al agricultor, al vendedor y al fabricante.

Como son actualmente los Estados Unidos la primera nación productora de hierro y acero, tienen por lo tanto sus aperos una gran ventaja, porque siempre será más provechoso para el agricultor comprar sus artículos en el mercado donde la materia prima es más barata y más abundante, sobre todo si allí mismo se manufacturan dichos artículos.

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These are the same machines which have this year been awarded the Grand Prix at Paris, one of a long line of over 1400 grand prizes, awards, premiums, medals and other proofs of success in competition with the best machines the world has made.

In every country where grain is grown you will find the Wood Harvesters, Mowers, Binders, and Rakes.

They are adapted to every condition and meet every emergency which confronts the farmer.

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Tal es la buena fama de que gozan estos artículos, que donde quiera que se han introducido, ora en Europa ó en América ó en algún otro país del mundo, su venta ha tomado rápidas creces.

FLETES MÁS BARATOS.

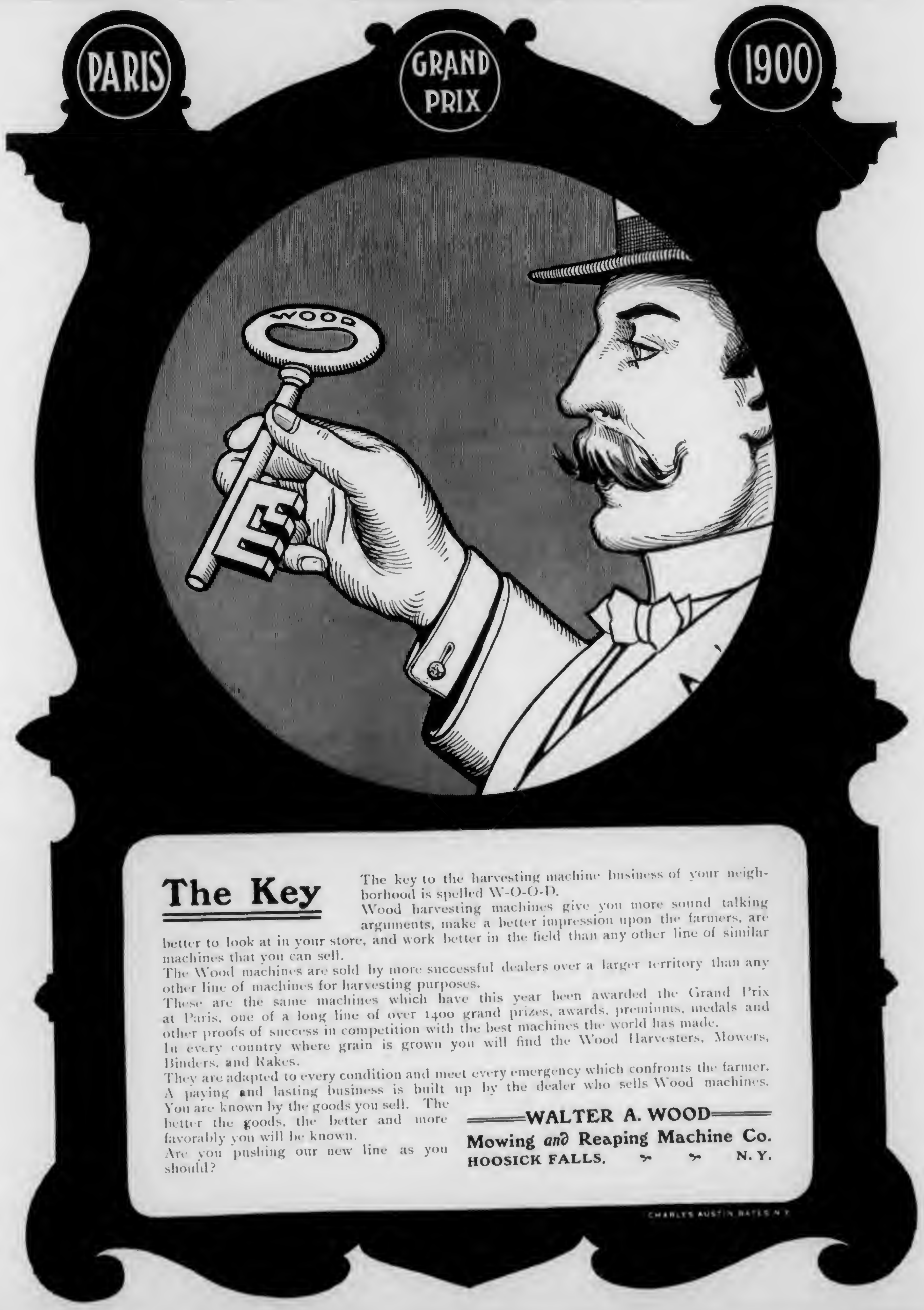
El comercio de los Estados Unidos con ciertos mercados europeos, habrá de tomar grandes creces por la realización de nuevos y mejores métodos para llegar al litoral. Un canal para navegación menuda, entre los grandes lagos del interior y el Hudson, comunicando de esa manera con Nueva York, sería un gran adelanto. El canal viejo que tan señalados servicios ha prestado en el progreso y la edificación de Nueva York, es ya insuficiente. Un nuevo canal interior, con un costo de $62,000,000, será votado el próximo otoño. Cosa de un millón de votos intervendrán en pro ó en contra del proyecto, en el Estado de Nueva York. Es ésta una medida nacional, que depende del voto del pueblo de un solo Estado de los cuarenta y cinco que la Unión comprende.

La necesidad de vías de comunicación más amplias y baratas es tan urgente que se está tomando en consideración otra medida, que se refiere á la construcción de un ferrocarril para carga, el cual ha de cruzar el Estado de Nueva York, y costará $20,000 por milla, y con todo su equipo necesario, nesesitará un desembolso de $50,000,000. Este ferrocarril probablemente tendrá rieles que pesarán 100 libras por yarda, y las locomotoras serán de 100 toneladas cada una, para arrastrar wagones de 100,000 libras de capacidad.

Pueden nuestros amigos de Europa y de otros países tener la confianza que el flete ha de abaratarse en lo futuro, hasta el mayor extremo, con muy poca margen encima del costo. Podrá hacerse el tráfico por el Canal Welland, bajando el río San Lorenzo, ó por medio de un canal interior de aguas profundas, ó por un ferrocarril para carga; pero lo cierto es que se está tratando de escoger el medio de transporte más barato, y cuando esto se realice, podrán Europa y Norte América estar más unidas, respecto al comercio.

Los aperos norteamericanos figuran en los mercados extranjeros con el solo objeto de competir con los de otras fábricas, no sólo por sus méritos, sino también con el fin de invitar á todos los agricultores á que los prueben practicamente en sus tierras. Un apero puesto en uso reporta igual beneficio al agricultor, al vendedor y al fabricante.

Como son actualmente los Estados Unidos la primera nación productora de hierro y acero, tienen por lo tanto sus aperos una gran ventaja, porque siempre será más provechoso para el agricultor comprar sus artículos en el mercado donde la materia prima es más barata y más abundante, sobre todo si allí mismo se manufacturan dichos artículos.



The Key

The key to the harvesting machine business of your neighborhood is spelled W-O-O-D.

Wood harvesting machines give you more sound talking arguments, make a better impression upon the farmers, are better to look at in your store, and work better in the field than any other line of similar machines that you can sell.

The Wood machines are sold by more successful dealers over a larger territory than any other line of machines for harvesting purposes.

These are the same machines which have this year been awarded the Grand Prix at Paris, one of a long line of over 1400 grand prizes, awards, premiums, medals and other proofs of success in competition with the best machines the world has made.

In every country where grain is grown you will find the Wood Harvesters, Mowers, Binders, and Rakes.

They are adapted to every condition and meet every emergency which confronts the farmer.

A paying and lasting business is built up by the dealer who sells Wood machines.

You are known by the goods you sell. The better the goods, the better and more favorably you will be known.

Are you pushing our new line as you should?

WALTER A. WOOD
Mowing and Reaping Machine Co.
HOOSICK FALLS, N. Y.

CHARLES AUSTIN BATES N.Y.

INTENTIONAL SECOND EXPOSURE

THE FARMER AND HIS IMPLEMENT.

The saving of labor is simply an addition to the profit from farming, and the difference of a small sum daily may be the turning point between profit and loss. The most formidable competitor of any farmer is some other farmer who uses a labor-saving appliance not possessed by him. It is customary to discuss the effects of tariffs, freights, markets, etc., as affecting the interest of the farmer, but it is not the merchant, manufacturer or exporter who keeps the farmer in debt. The man who destroys the profits of the unprogressive farmer is he whose implements are of the best and most highly improved for the purposes desired.

The farmer, without regard to the country in which he resides, competes with farmers over the whole world. The rye grower of Russia must fix his prices according to the amount of wheat, rye or maize grown in the United States, Argentina or Australia. He may be thousands of miles away from his competitors, but the law of supply and demand governs the countries of the world, and no producer can escape its influence.

If the farmer is thus compelled to sell his produce in competition with the farmers of the world, should he not also buy in the markets of the world? Such a proposition may not have been seriously considered by the cultivators of the soil in some countries, but that all farmers should sell in the highest markets and buy in the cheapest is a fact, if not a truth, so far as its moral application is concerned. It is the duty of all farmers, therefore, to equip themselves with those appliances which will permit them to produce at the lowest cost.

No farmer is under obligation to any one, so far as his business relations are concerned. The manufacturer who makes implements for the use of the farmer would cease his operations unless he could derive a profit, and he will sell to farmers in Europe as readily as he will to those in America. When he buys his raw material, such as iron and steel, he will purchase from the country that will supply him at the lowest prices. The farmer should be no exception to this rule of business. He should buy wherever he can get his goods at the lowest cost, considering their quality.

All countries look to the United States for a large share of agricultural products. America supplies many countries with breadstuffs and meats, and the world with the larger proportion of cotton. To do this the farmers of the United States must ever be on the alert to secure the aid of the best labor-saving implements, machinery and vehicles. If they did not thus look forward to the saving of labor they could not compete with hand labor in those countries where women and children perform much of the work on farms. It is the ability to compete with other countries that gives the United States its advantage.

American implements cannot be excelled for efficiency, nor can any country make machines, implements and vehicles as cheap and as good as they can be made in the United States, for the reason that hard and soft coal, petroleum, natural gas, iron, copper and timber are abundant, with rivers and water courses extending into every state, while railroads reach from the Atlantic to the Pacific Oceans, having branches in every direction.

RAILROADS THE POWER OF TRADE.

The lesser nations of the world are beginning to feel the mighty impulse in every fiber of their national being which comes from railroad construction. There is an intimate relation between railroad building and implement making. Railroads open up countries and make traffic possible. What is now going on in this dawn of the twentieth century, in every country on the globe, is full of meaning. We are on the eve of the greatest revival and expansion of agricultural activity the world ever experienced or encountered. The sprinkling of the drops of the coming shower warn us. Let us take a quick glance, as the year and century opens, at the situation and prospects. There is scarcely a car shop, rail mill or locomotive works in the United States but has orders booked for export for months ahead. Merchants and manufacturers report a rush of inquiries. The Chilian Government has ordered three hundred cars, and Costa Rica thirty freight cars. There are now pending through export commission merchants large contracts for railway equipment and material from Mexico, Cuba, Argentina, Brazil, Japan, South America, Australia and the West Indies. During 1900 the value of rail exports was $12,000,000. Locomotive exports last year amounted to $5,000,000 in round figures, cars $3,000,000, electrical machinery and telegraph and telephone supplies $12,000,000.

IMPLEMENTS WILL FOLLOW.

No one thing has done so much to advertise the United States manufactures in Europe, Asia and Africa as the bridge-building contracts that have been taken by United States bridge builders for the erection of bridges in various parts of the world. American implement makers are already profiting by this victory. A British correspondent in South Africa, writing to one of his home papers, gives vent to his disgust by declaring the capture of South African trade by Americans to be abominable, deplorable and regrettable. This is strong language, but it lacks judgment. The coming development of railways all over the world, to which bridge building is merely incidental, will draw immense supplies from the United States, and as a natural result implements will follow in increasing volume.

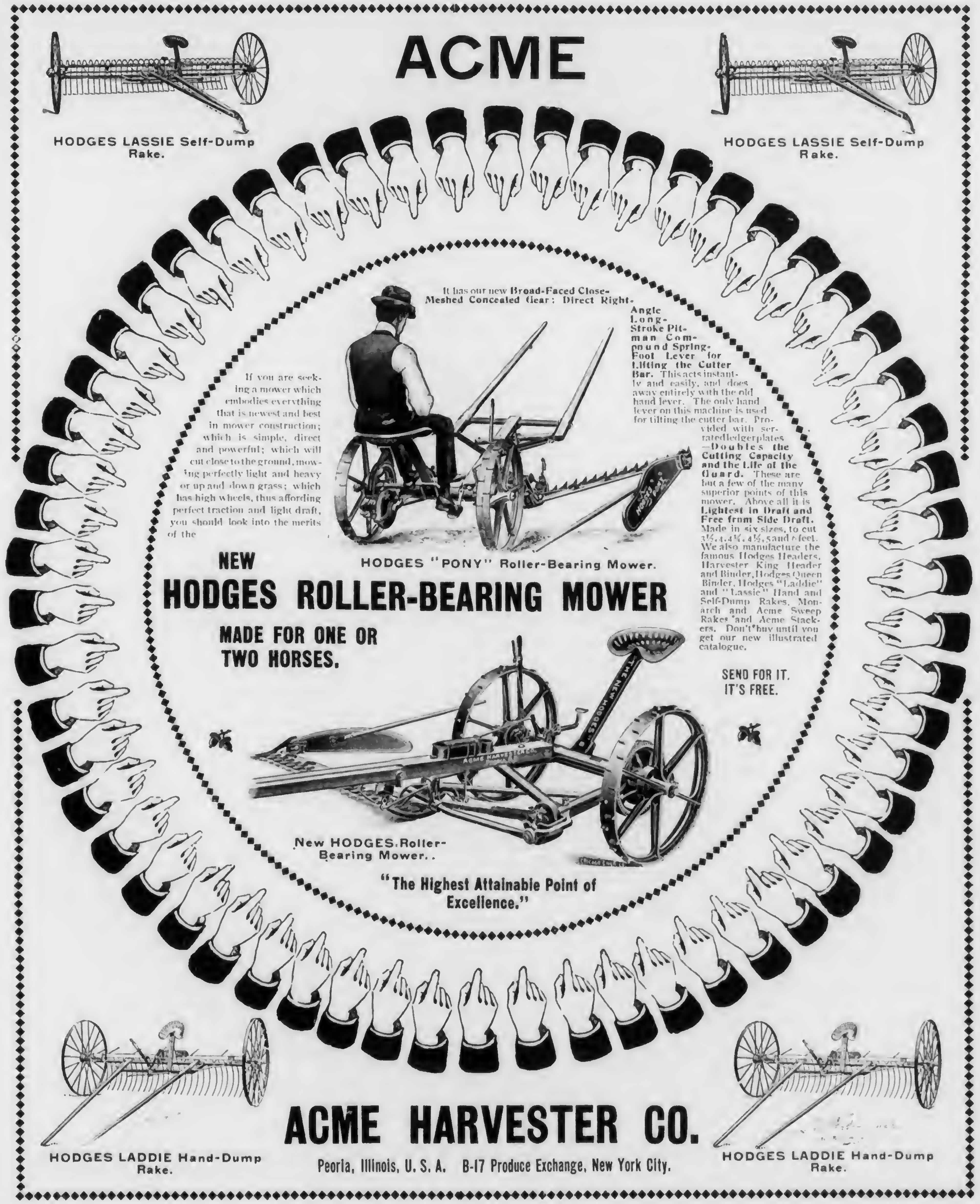
AMERICAN HARVESTING MACHINERY.

The prizes won at Paris by the American harvesting machine companies are evidences that they possess the highest merit. The strongest evidence, however, is the fact that nearly every week large cargoes of harvesting machinery are shipped for the different countries of the world. The sales of such machinery are not confined to the grain growing countries of Europe, as orders come from every quarter of the globe. Argentina grows her wheat crop and harvests it mainly with American machines; Australia is demanding more every year, while Asia and Africa are also buying largely. It is the excellence of the American harvesting machines that makes them the favorites. Their light draft, durability, perfect work and low cost force them upon farmers in all countries.

America grows more grain than any other country, which fact should alone be sufficient to convince foreign farmers that the American manufacturers of harvesting machinery have had greater opportunities for learning the requirements of a perfect harvesting machine than manufacturers of other countries. The American factories are in the centers of vast wheat and maize growing regions, and if the machines were not perfect in every respect they could not perform the work of the thousands of grain producers in America. We mention this fact because it is almost an impossibility for an American manufacturer to place upon the market a harvester that was not capable of performing all that is demanded by a class of farmers who produce grain almost exclusively, and in a country where a farm of one hundred acres (about 42 hectares) is not considered large.

Large crops of hay are also produced by American farmers, which demands an enormous number of mowers. There is but little room for improvement in such machines, as they are considered as having reached the highest degree of perfection, but the manufacturer is ever endeavoring to add something better or to reduce their cost to the farmer. The farmers of other countries can never make a mistake by buying machines made in a country where grain and hay are produced enormously, as the strongest evidence in their favor is that they are used where the best work is necessary in harvesting these staple crops.

There is a steady increase in the past few years in the cultivation of products calling for the use of the cultivator, especially in European countries. Agents of implements there write of the changing methods of cultivation in some sections where hand methods have very largely prevailed. The export statistics from the United States in this respect are very interesting.


HODGES LASSIE Self-Dump Rake.
HODGES LASSIE Self-Dump Rake.
HODGES LADDIE Hand-Dump Rake.
HODGES LADDIE Hand-Dump Rake.
HODGES "PONY" Roller-Bearing Mower.
New HODGES Roller-Bearing Mower.

ACME

If you are seeking a mower which embodies everything that is newest and best in mower construction; which is simple, direct and powerful; which will cut close to the ground, mowing perfectly light and heavy or up and down grass; which has high wheels, thus affording perfect traction and light draft, you should look into the merits of the

NEW
HODGES ROLLER-BEARING MOWER
MADE FOR ONE OR TWO HORSES.

It has our new **Broad-Faced Close-Meshed Concealed Gear; Direct Right-Angle Long-Stroke Pitman Compound Spring-Foot Lever for Lifting the Cutter Bar.** This acts instantly and easily, and does away entirely with the old hand lever. The only hand lever on this machine is used for tilting the cutter bar. Provided with serrated ledger plates—**Doubles the Cutting Capacity and the Life of the Guard.** These are but a few of the many superior points of this mower. Above all it is **Lightest in Draft and Free from Side Draft.** Made in six sizes, to cut 3½, 4, 4¼, 4½, 5 and 6 feet. We also manufacture the famous Hodges Headers, Harvester King Header and Binder, Hodges Queen Binder, Hodges "Laddie" and "Lassie" Hand and Self-Dump Rakes, Monarch and Acme Sweep Rakes and Acme Stackers. Don't buy until you get our new illustrated catalogue.

SEND FOR IT. IT'S FREE.

"The Highest Attainable Point of Excellence."

ACME HARVESTER CO.
Peoria, Illinois, U. S. A. B-17 Produce Exchange, New York City.

AMERICAN ORGANIZATIONS.

European implement dealers have their own difficulties in marketing implements, but when analyzed they are not radically different from those which beset the American implement manufacturer. The troubles on both sides are fought out quietly, the only echoes finding their way to the general public through convention meetings. The European implement dealer knows very little as to conditions on the American side of the Atlantic, but one conclusion can be stated to them, which is that the experience of forty years in marketing implements in America establishes the fact that the best plan of selling implements from the factory is to have regular dealers handle the goods, men who understand them, who, as a prominent dealer said in a recent convention, can sell, set up, deliver, watch, fix when in trouble, settle and collect, and hold his own with the most enterprising competitor.

The American implement association is known as the National Association of Agricultural Implement and Vehicle Manufacturers, and is composed of about three hundred concerns, many of them leading ones in their lines, and which has nothing to do with prices. Its object is to agitate for lower freight rates, better and cheaper passenger fares and facilities, more uniform laws on collections, mortgages and credits, patents, improved waterways, the repeal of obnoxious legislation and in general to work for the lessening of the expenses of doing business.

The selling of goods on commission is going out of date in the United States, and a contract for a straight and absolute sale, based upon years of consideration, has been adopted. The manufacturers claim that dealers should give more regard to good material used, and to not be misled by those who use inferior material and cut prices.

Another point American manufacturers watch is to restrict each dealer within definite territory. A strong moral sentiment is being built up against the too frequent breaking of contracts, in order that manufacturers may be protected against wrong. Bad crops often force dealers to ask for such cancellations. On the subject of repairs the American implement maker expects to have the broken parts returned, in order that defects in the use of inferior material can be proven, and also to insure against deception.

One matter which is being discussed in the United States is the employment of agents or canvassers. Manufacturers in many cases employ canvassers to work up trade for the dealers who handle their goods. A change is being advocated by some, which is to let the dealer in each district do his own canvassing, it being argued that he will do better work and more of it among his own neighbors, and at less expense for railroad fares and hotel bills.

There is a remarkable development of fraternal feeling among American implement manufacturers and dealers. They contest fiercely in business and ceaselessly work for trade, but at heart they feel kindly to each other and meet in social intercourse as though business rivalry had no existence. The estimated capital in the implement, vehicle and kindred manufacturing industries in the United States is stated to be about $300,000,000, employing over 200,000 men.

SUGAR BEETS IN SPAIN.

Incidental to the production of sugar beets on a large scale in Spain is the question of the growing demand for agricultural implements there. Exporters in the United States and European importers of machinery both testify to the fact that since Spain lost the West India Colonies the cultivation of beet sugar has almost monopolized the attention of Spanish agriculturists. To these agriculturists, and to those who seek to supply them with implements, this journal has a message in its columns which may be expressed in very few words,—viz, that success lies in the most scientific methods and in the greatest possible use of labor-saving appliances. Nowhere in the world is the gospel of scientific agriculture and of labor-saving appliances so zealously proclaimed and inculcated as in the United States Its greatest competitors admit this fact.

WINDMILLS IN SOUTH AMERICA.

The use of windmills in Central and South America is referred to in recent correspondence as on the increase. A progressive American farmer would as soon be without a horse as a windmill, because it never gets tired or wants oats. Those who are using windmills are discovering their value more and more. They are Jacks-of-all-trades, as it were, if the proper appliances are used. From various sources abroad comes the information that windmills are coming into higher appreciation. American makers are improving them. Agriculturists in the Argentine Republic are evidently determined to profit by windmills. Their recent purchases have been quite heavy.

TRADE WITH SOUTH AFRICA.

Export merchants are anxiously awaiting news of trade resumption in South Africa. Our direct advices from that quarter are to the effect that persistent hostilities in the northern area are probable, and that no date as to termination can be guessed at. Exporters of American products are encouraged at the friendly feelings shown by traders there to Americans, and predict that when hostilities cease the country will be more largely devoted to strictly agricultural pursuits than formerly. One cause leading to this will be the large additions to the mining population, which it is anticipated will follow peace.

PROMPT SHIPMENTS TO SOUTH AMERICA.

The attention of South American implement dealers is called to the increasingly important fact that shipments are made from the United States to South American ports on incredibly short notice as measured by the time taken by European manufacturers and exporters. Implement dealers and farmers in South American countries will soon doubtless give this feature the value it deserves. Take, for example, a batch of orders received by mail between December 10 and 15. On Saturday, December 31, a ship left New York for Buenos Ayres, carrying $55,000 worth of implements and machinery. Dealers elsewhere are sure to receive similarly prompt treatment.

HAND AND POWER PUMPS.

The sale abroad of American hand and power pumps, as we learn from export statistics, is on the increase. Buyers abroad are again invited to keep in close touch with the progress the pump-making industry is making in the United States, especially in small pumps. American manufacturers are building up quite a trade in South Africa, in North Africa and in Southern Europe, where conditions are developing for their greater use. Some marked improvements have been made, and recent buyers in Europe speak of them in high terms.

AMERICAN BUILDINGS.

To give some idea of the tall office buildings in the United States, it may be stated that they are numerous in the large cities and are increasing in number. One building in Chicago contains 3200 persons. Its cost was about $1,800,000. It has ten passenger elevators, and one large elevator for freight. These elevators carry over 20,000 persons on some days. The building is a town to itself, having its own power plant, and a large force is employed to keep it in repair.

Those who introduce American shop and factory products in foreign lands with success have long since learned the value of avoiding the unconscious assumption of superiority, which it is sometimes so natural to feel. Pride is instinctive in human nature and it must be respected. Habit is a tyrant, and its control has to be fought with delicacy. The disposition of human nature, as generally found, is to do no more toil than is necessary. The spirit of American restlessness is, however, spreading over the world, and it is destined to influence all people. But care should be taken to disturb old conditions, old methods and old loves with a gentle and guiding hand. Experience will assist in teaching better modes.

"Dans un concours avec douze autres faucheuses sur le plus vaste domaine des États-Unis, ayant une étendue de 266,000 acres, la faucheuse à chaînette "Jones" a remporté le premier prix, ayant été jugée la meilleure au point de vue de la légèreté du tirage et de la perfection du travail."—*R. M. Pogson, Te Jon Rancho's, Cal.*

LIEUSES
FAUCHEUSES
MOISSONNEUSES
COUPEUSES D'ÉPIS
RÂTEAUX À FOIN
RÉMOULEUSES
DE FAUCILLES

PLANO

À MOTION LÉGÈRE

Les machines le plus simplifiées et les plus parfaites au monde pour faire la récolte.

ONT REMPORTÉ LES HONNEURS DE 1900.

Des milliers de négociants actifs et éveillés ont, par la vente de ces machines, doublé et triplé leur chiffre d'affaires dans les saison de 1900. Vous doublerez le vôtre en 1901.

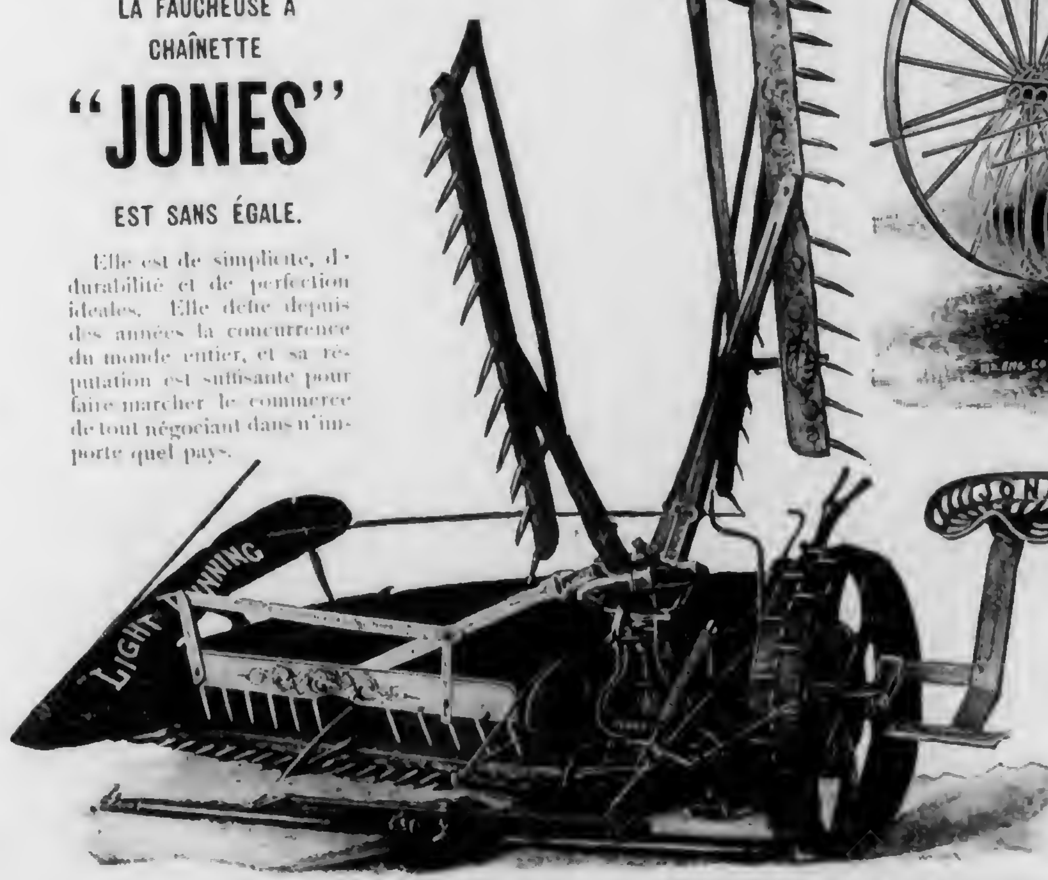
La Lieuse basculaire "Jones" est le triomphe reconnue de l'époque.

LA FAUCHEUSE À CHAÎNETTE

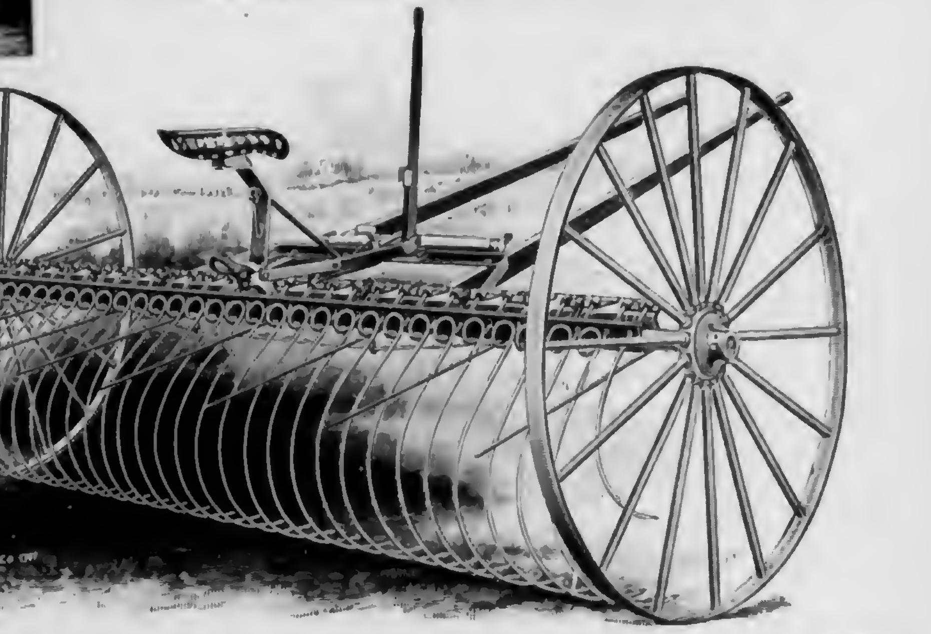
"JONES"

EST SANS ÉGALE.

Elle est de simplicité, de durabilité et de perfection idéales. Elle défie depuis des années la concurrence du monde entier, et sa réputation est suffisante pour faire marcher le commerce de tout négociant dans n'importe quel pays.



La Moissonneuse "Jones" est la plus parfaitement ajustable de toutes les moissonneuses et la seule munie d'un balancier à ressort.



Le Râteau à Foin ajustable "Jones" n'a pas d'égal comme travailleur et article vente rapide. Le seul Râteau à Foin ajustable au monde.

Ecrire pour Catalogue Descriptif

The Plano Manufacturing Company

CHICAGO, ILL., ETATS-UNIS D'AMÉRIQUE

115 Southwark Street, LONDRES, S. E., ANGLETERRE.

HAND AGRICULTURAL TOOLS.

The Geneva Tool Co., of Geneva, Ohio, U. S. A., is the pioneer company of that section of the United States west of the Ohio river engaged in the manufacture of hand agricultural tools.

Their lines include forks of all kinds, such as hay forks, manure forks, header and barley forks, coke forks, coal forks, stone forks, tan forks, ore forks, sluice forks, stable forks, fish forks, beet forks, road forks, baling press forks, etc.; in fact, forks for all purposes.

In the line of hoes they make field, garden, weeding, cotton, street and mortar, of every desired design.

They also manufacture garden and lawn rakes, hay and grain rakes, asphalt, road, coal and gravel rakes; also potato hooks, manure drags, stone hooks, clam diggers, dock diggers, sidewalk cleaners, floral sets, sugar beet tools, horse hay rakes, shovel plows, cultivators, grass and bush snaths, tool handles, etc.

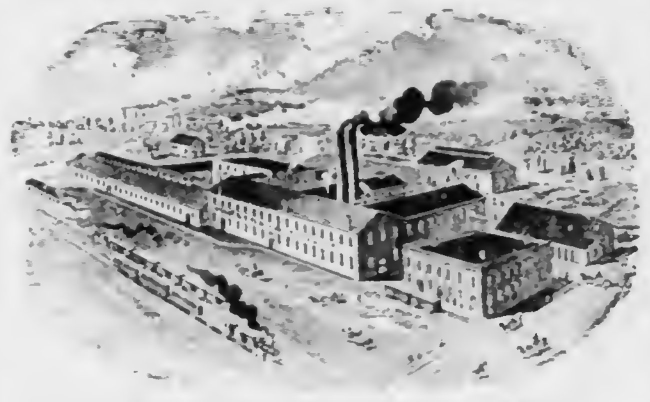
The above indicates the great variety of hand tools made by the Geneva Tool Co. Their factory is situated on the tracks of the main line of the Lake Shore and Michigan Southern Railroad, and also within a few rods of the New York, Chicago and St. Louis Railroad; hence their shipping facilities are unsurpassed, both to the seaboard and other points. They are also in close proximity to the great iron and steel centers of the United States, and are in the immediate vicinity of the finest second growth white ash to be had anywhere, as well as near extensive coal fields. These advantages permit them to manufacture and sell at prices that are satisfactory to all who use their goods.

We illustrate their factory, which has been enlarged since the illustration was made. The present floor space of their factories and warehouses is about 180,000 square feet. The buildings are of the most modern and convenient design, and the machinery equipment is the latest improved that mechanical skill can devise or which can be purchased. They derive power from a 375 horse-power engine.

Upward of 1,800,000 forks, hoes, rakes, hooks, etc., are made and sold every year; also 120,000 snaths, and over 2,000,000 tool handles. They employ 300 men the entire year, and the management is in the hands of those who have given years of experience to the manufacture and improvement of hand tools. They also have a branch factory at Paducah, Ky., U. S. A., devoted exclusively to the manufacture of tool handles, with a 70 horse-power engine.

Their goods have a large sale over the whole of the United States, and they also export to Continental Europe, Great Britain, Canada, Mexico, South America, Central America, South Africa, Australia and Japan.

The Geneva Tool Co. gives particular attention to proper shipping and the packing of goods for foreign countries. Their export department is in the hands of men selected for their experience and qualification, and they thoroughly understand how to handle the company's rapidly growing foreign trade, their first duty being care and promptness in the execution of all orders.


FACTORY OF THE GENEVA TOOL CO., GENEVA, OHIO, U. S. A.

The demand for these articles increases every year, and their goods are used in every country where such tools can be applied, which is evidence of the progress of the company and the excellence of their goods.

Their new, large and well-illustrated catalogue, No. 55, which is just from the press for 1901, is now ready for distribution and will be sent upon application. They claim the finest and best goods offered to the trade, with prices always right. Goods marked "Geneva" are standard, and can always be depended upon to give satisfaction.

EXPORTS OF IMPLEMENTS.

The fact that a country increases its exports in any particular line of goods is evidence that such goods possess merit. If manufacturers who meet close competition fail to increase their sales there is always a cause, and that cause may be that rivals in other countries can make and sell goods cheaper. One of the strongest indications that American agricultural implements are finding favor abroad is the fact that during 11 months of the year 1900 the United States exported agricultural implements to the value of $15,449,683. For the same period in 1898 the value of the exports was $13,100,298, and in 1898 the value was $8,823,923. It will be noticed, therefore, that in the short period of two years the exports of agricultural implements from the United States to foreign countries have nearly doubled. Unless American implements were of the highest quality this wonderful increase in two years could not happen, but the fact is plain and cannot be overlooked. Mowers and reapers comprised the larger proportion of the exports, and so rapid is the increase in those lines that every year witnesses sales much larger than the preceding. American harvesting machinery is finding friends everywhere, the sales to Australia in 1900 showing a large increase. Plows, grain drills, harrows, cultivators and other implements are also being exported more largely each year.

DEMAND FOR HARROWS.

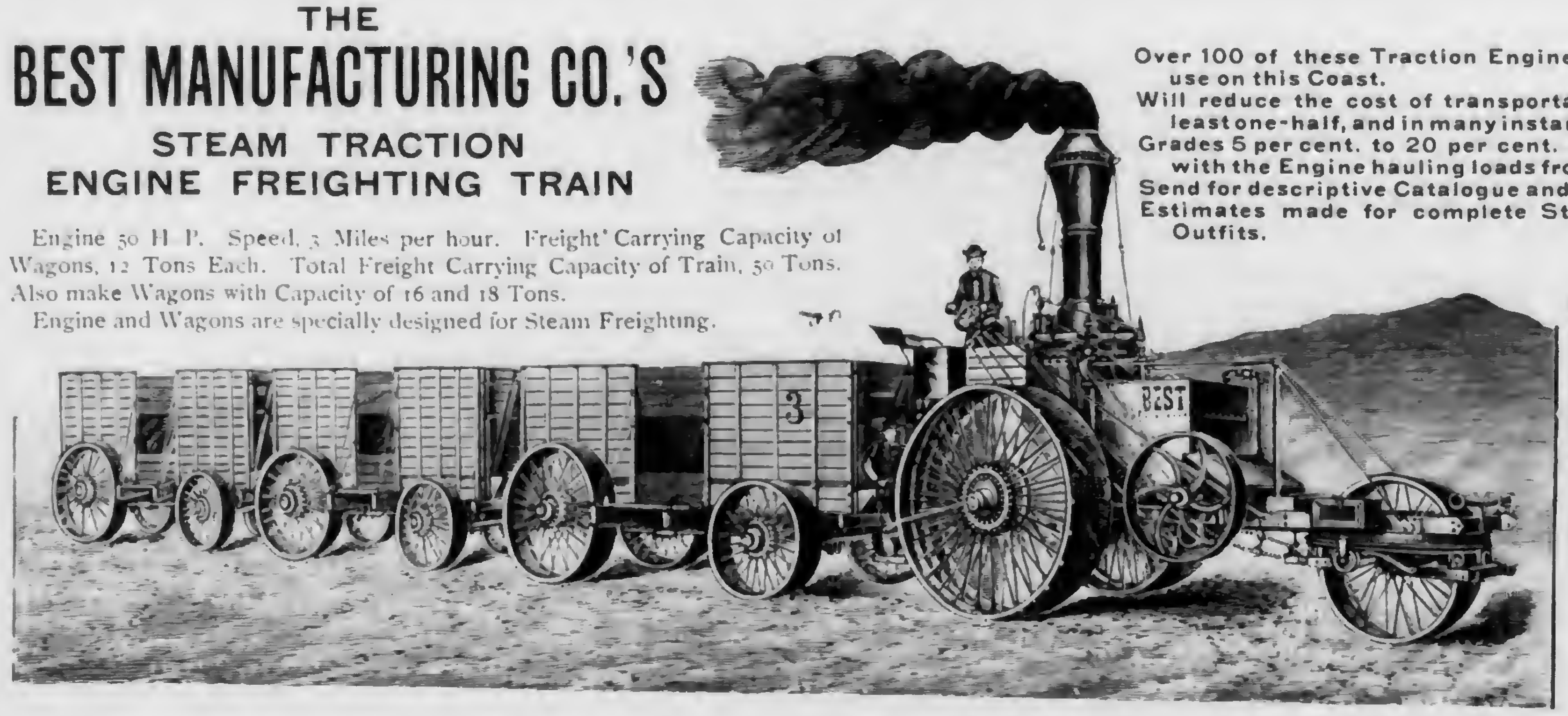
The improving demand for American harrows hardly calls for other comment than that one machine sells another, a fact borne out by the testimony of a number of European handlers of American harrows. These makes seem to exactly fit into the requirements of other countries, and the long and good service they render gives them a name among farmers that makes their further sale comparatively easy.

THE
BEST MANUFACTURING CO.'S
STEAM TRACTION
ENGINE FREIGHTING TRAIN

Engine 50 H. P. Speed, 3 Miles per hour. Freight Carrying Capacity of Wagons, 12 Tons Each. Total Freight Carrying Capacity of Train, 50 Tons. Also make Wagons with Capacity of 16 and 18 Tons.

Engine and Wagons are specially designed for Steam Freighting.

Over 100 of these Traction Engines in successful use on this Coast.
Will reduce the cost of transportation per ton at least one-half, and in many instances two-thirds.
Grades 5 per cent. to 20 per cent. are easily taken with the Engine hauling loads from 30 to 50 tons.
Send for descriptive Catalogue and Price List.
Estimates made for complete Steam Freighting Outfits.



ADDRESS
THE
BEST
MFG.
CO.
San Leandro,
California,
U. S. A.

HARVESTING IN ANCIENT AND MODERN TIMES
BEFORE THE ADVENT OF DEERING MACHINES

Procédés de Récolte anciens et modernes avant l'apparition des Machines Deering.

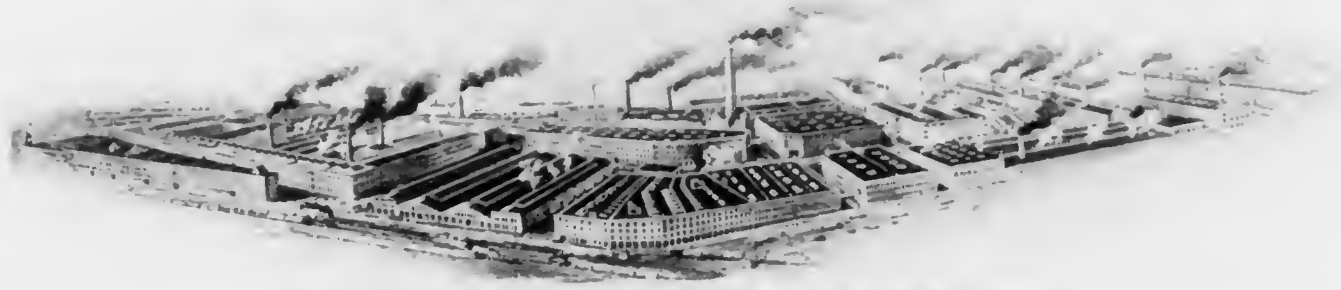
Ernten in alten und modernen Zeiten, bevor der Erfinding Deeringscher Maschinen.

Cosechando en tiempos antiguos y modernos antes de la llegada de las maquinas de Deering.

Since the introduction of the Deering Machines the old method of harvesting can be dispensed with.
Deering Machines are models of excellence.
They are properly called "Light Power Ideals."
They are in use in all parts of the world.
Their use always give satisfaction.
Sales of the Deering Machines are increasing yearly.

Seitdem die Deering-Ernte-Maschinen aufgetreten sind, sind die alten Ernte-Methoden nicht mehr noethig.
Deering-Maschinen sind der Hauptpunkt der Vorzueglichkeit.
Sie werden mit Recht "Leichte Zugkraft Ideale" genannt.
Sie werden in der ganzen Welt benutzt.
Ihr Gebrauch gibt stets Zufriedenheit.
Deering Verkaeufe vergroessern sich jaehrlich.

Die Grosze Fabrick Deerings.



Les Grandes Usines Deering.

The Great Deering Works. Las grandes fabricas de Deering.

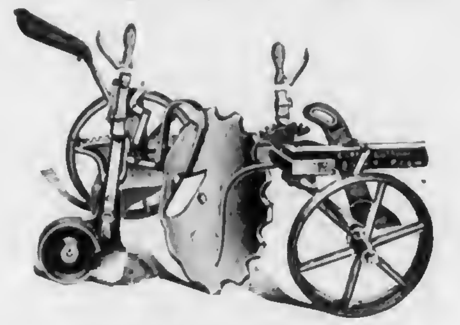
Depuis que les Instruments de Récolte Deering ont fait leur apparition les anciens procédés de récolte ne Sont plus nécessaires.
Les Machines Deering Sont des types d' excellence, Elles Sont, à juste titre, appelées "Idéales à traction légère."
Elles Sont en usage dans tout l'univers. Elles donnent partout entière satisfaction.
Les ventes Deering augmentent d'année en année.

Desde la venida de la maquinaria cosechadora Deering, los métodos viejos para cosechar no son necesarios ya. La máquinas de Deering son el modelo en excelencia y con justicia llamados "Tiro liviano Ideales."
Estan en uso en todas partes del mundo. Siempre trabajan satisfactoriamente. Las ventas de Deering aumentan de año á año.

DEERING HARVESTER COMPANY, CHICAGO, U. S. A.

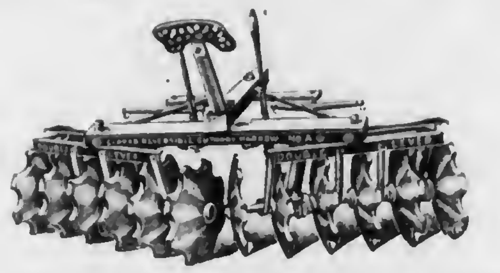
CLARK'S CUTAWAY IMPLEMENTS.

The Clark's cutaway implements are manufactured only by the Cutaway Harrow Co., of Higganum, Conn., U. S. A. They have been on the market so long, and have been so extensively advertised, that they are known by nearly every progressive farmer. The blades of all their tools are made of the finest cutlery steel. Their harrows and disc plows are made of any desired size to suit the needs of any particular crop or contingency of soil. They are really a combination of harrow and plow, which will perform double service at one operation, and cover the whole range of field service desired by the truck gardener, fruit cultivator, ordinary farm service, the plantation, the cotton fields of the South, the fruit plantations of California or the wheat fields of the North, Southeast or West. They are equally good for hillside or plain; they perform the work better, and five to ten times faster, than the old way. All who use them send gratuitous testimonials of their worth. They have been used extensively in all foreign countries, especially in Australia, New Zealand and all grain-growing countries.

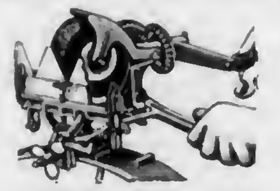

CLARK'S SULKY DISC PLOW

It has been found that wherever the Clark's cutaway tools have been used for any crop, that 15 to 20 per cent. more has been obtained by their use. This adaptability of service has been secured not only after long years of experiment and actual trials in the field of Mr. Clark, but by his extended travels and observations, covering all the states of the American Union; in fact, covering the whole American continent, seeing the real need of soil conditions and being guided by the suggestions of planters and farmers on their own grounds. From his experience comes the extension head, reversible, as embodied in the California and extension head harrows, which are made to reach out under the low limbs and stir the soil in the orchard without injury to the trees.

The gang plows and seeders combined are excellent seed drills or plows; they can seed a strip up to 6 feet wide at a trip with grain or cow peas. The sulky disc plows very largely lighten the work that was formerly done with the common drag plow. The cutaway implements for the cotton fields and general field use, are great money savers. The company also makes Clark's root cutters and Clark's smoothing harrows for harrowing and leveling fields and lawns. All of these, together with the Sampson tobacco press, do exceedingly fine work for the purposes which they are designed.


CLARK'S DOUBLE LEVER REVERSIBLE HARROW

These machines are all warranted to be of superior quality, and are claimed to do the work better than any similar machines on the market. These harrows and plows are of any sizes and capacities—as varied as the needs of the user—so that to obtain detailed knowledge of them we recommend every dealer to write the company for a descriptive catalogue.


MOWER-KNIFE GRINDER.

The reputation of these goods is such that wherever they have been introduced, whether in Europe or America or any other section of the globe, they always sell rapidly.

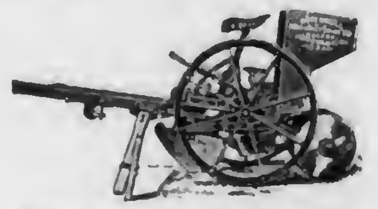
IMPLEMENTS AND VEHICLES.

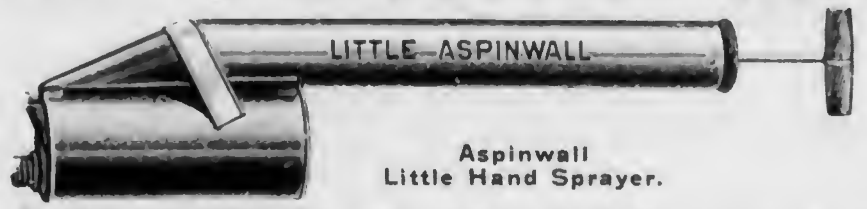
United States exporters of agricultural implements and vehicles well understand that the only sure method of establishing trade with foreign countries is not only to satisfy the customers, but to sell goods that are durable, and at the lowest possible price. Any claim that an article can be purchased lower than cost would be apparent to all sensible persons as an absurdity. Fortunately, the United States manufacturers offer their implements and vehicles on their merits, asking of the merchants and farmers of the world that they be allowed a fair opportunity for comparison. Business methods do not always imply the use of devices or deceit in order to succeed. The countries that find markets are those which promote trade by legitimate methods. Every American manufacturer understands the necessity of placing before the world's buyers such goods as will bear inspection in all details of construction. Durability, strength and efficiency are qualities that are never overlooked, while America's natural advantages are such as to enable her manufacturers to compete in prices in any country. The merchants and farmers of Europe have arrived at that degree of intelligence which does not demand proscription or prejudice to rule in business transactions. The best will always be in demand, and American manufacturers are aiming to take the lead in standard requirements in goods.

The first large shipment of potatoes that has gone forward from the State of Washington to China was sent last month from North Yakima, and consisted of 500 tons destined for Shanghai. In the past the greater amount of food stuff has been flour, but now the Chinese have acquired a taste for potatoes.

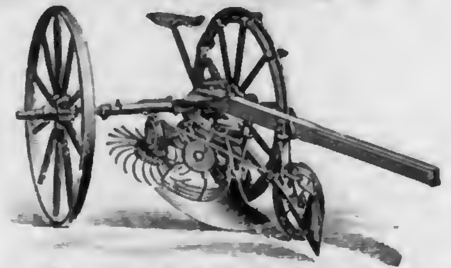
Several prominent passengers arrived in Philadelphia last month on the steamship Admiral Schley, which came in from Jamaica. Included in the party were the Hon. S. Oliver, Colonial Secretary for the island of Jamaica; O. Hoffman, F. Bonneli and H. E. Church. The object of their visit is to place an order for articles desired on the island.

ASPINWALL POTATO MACHINERY


Aspinwall Potato Planter.



Aspinwall
Little Hand Sprayer.


Aspinwall Potato Digger.

Reputation established Over twenty years on the market Used and indorsed by thousands the world over We also make Barrel Churns, Lawn Swings, Post Hole Diggers and Weeders. Write for catalogues and prices

Maquinaria "Aspinwall" Para Patatas (Papas).
Bien sentada Reputación en el espacio de Veinte Años en el Mercado. Usadas y Recommendadas por millares de parroquianos en todo el mundo. Fabricamos tambiém Mantequilleras de Barril—Columpios de Linón—Abridoras de Agujeros y Escardillas. Escríbase pidiendo Catálogos y piecios

Appareils Aspinwall Pour Traitement des Pommes de Terre.
Réputation établie dans le Commerce depuis plus de vingt ans. En usage et en faveur chez des milliers de clients dans le Monde entier. Nous fabriquons également des Barattes à beurre—Balançoires de Pelouse—Appareils pour planter les Poteaux, et Sarcloirs, à mauvaises herbes Demander par lettre les Catalogues et Prix Courants.

"Aspinwall" Kartoffele-Grate.
Stehen seit uber zwanzig Jahren im Handel in bestem Rufe. Sie werden in der ganzen Welt von Tausenden benutzt und emplohlen. Wir fabriziren auch Butterfasser, Schaukeln, Pfostensetzer und Jater. Kataloge und Preisliste gratis und franco.

Aspinwall 4-Row Sprayer.

DEPT. B.
ASPINWALL MANUFACTURING CO., Jackson, Mich., U.S.A.

Aspinwall Sorter.

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TEDDERS
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PROTECTION FOR GERMANY.

The importers of American implements into Germany will no doubt note the strong probability of the placing of a duty of 44 cents a bushel on imported wheat. They will also note the purpose of the German agriculturists and their representatives in the government to render Germany independent of the outside world for its food supply. This is a movement which appeals to the patriotism as well as to the personal interests of the German agrarians, and it is a movement which may or may not prove beneficial to the German people. European handlers of implements and farm machinery further recognize that German farmers are more scientific than farmers in some countries. More fertilizers are used, more chemistry is applied and the greatest possible economy is practiced in the use of ground. This simply means that more and better farming appliances are a necessity. The world will be searched for what is most suitable to German requirements. American exporters are giving still closer attention to this new development. Agricultural protection in Germany means a great deal, and those who can furnish the best aids to make German agricultures under protection more profitable will find sale for their appliances. The best protection to European farmers is for them to use the American-made machines and implements.

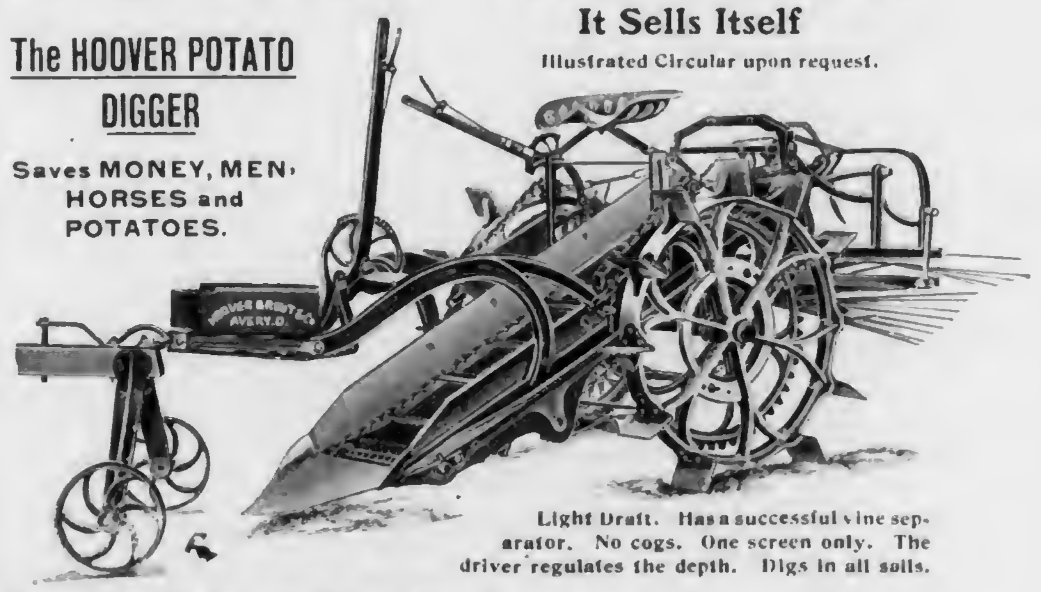
The Government of Chili has placed $20,000 at the disposal of the National Agricultural Society for the purchase of agricultural machinery, which will be made through its president at Santiago, Chili. This action is the result of long deliberation, and marks a departure in the policy of that Government, which has never been slow to see an advantage. More attention is to be hereafter given to the development of the agricultural capabilities of that favored strip of land. The entire Pacific coast, north and south, is being aroused to activity in mining and agriculture especially. Ship lines are being established to facilitate intercommunication, and railroad building is rapidly advancing to enable those in the interior to reach the coast ports with their products. What Chili has done could be wisely done by other governments of Central and South America. A new era is dawning to and for those countries, especially along agricultural lines.

Agricultural machinery has been added to the free list under the new Salvadoran tariff. The tariff, in general, is protective. Calculations have been based on the peso being worth 40 cents. The United States gold dollar is quoted at about $1.50.

AMERICAN CULTIVATORS.

The American cultivator has reached a degree of perfection in its mechanism, and is now furnished at a price which removes almost every obstacle which in years past interfered with its use abroad. At first the European farmer refused his acceptance of it, but that was long ago. The reputation which the cultivator made soon smoothed the way for its general use. American makers have not been content, however, to let the cultivator remain as it was. It will pay those who think they know all about this implement to confer with some of the well-known makers, whose names are to be found herein.

MENTION THE EXPORT IMPLEMENT AGE WHEN WRITING TO ADVERTISERS



A DIGGER THAT DIGS
It Sells Itself
Illustrated Circular upon request.
The HOOVER POTATO DIGGER
Saves MONEY, MEN, HORSES and POTATOES.
Light Draft. Has a successful vine separator. No cogs. One screen only. The driver regulates the depth. Digs in all soils.
HOOVER, PROUT & CO., Avery, Ohio.

Double Tube Lightning Insect Exterminator and Sprayer
with Detachable Glass Reservoir.
A most practical little tool, which, when used with the proper ingredients, will exterminate every living thing obnoxious to crops and live stock. Every farmer, gardener, florist and stockman will find it indispensable. Any spraying liquid can be used in it with economy, and it does save time.
Two large sprays, covering a radius of 2½ feet, produced with one plunge of the handle.
It is light, but well made; is cheap, and repairs, if needed, obtained in the smallest village.
Packed in cases of three dozen for foreign trade.
Circulars and prices free upon application.
H. W. DOUGHTEN, Moorestown, N. J., U. S. A.

Make Your Cow Comfortable
Protects Cows and Horses from torture by flies.
IT IS CHEAP, and, when the comfort of the animals is considered, a Blessing.
It is entirely harmless, and does not injure the coat of either cows or horses, and it will keep flies from stock during the summer months.
To be applied with a sprayer, but works best with our Double Tube Lightning Insect Exterminator and Sprayer.
FLY KILLER OIL
H.W. DOUGHTEN MOORESTOWN N. J. U. S. A
Put up in one-gallon cans, one dozen cans to a box. Booklet and prices free upon application.
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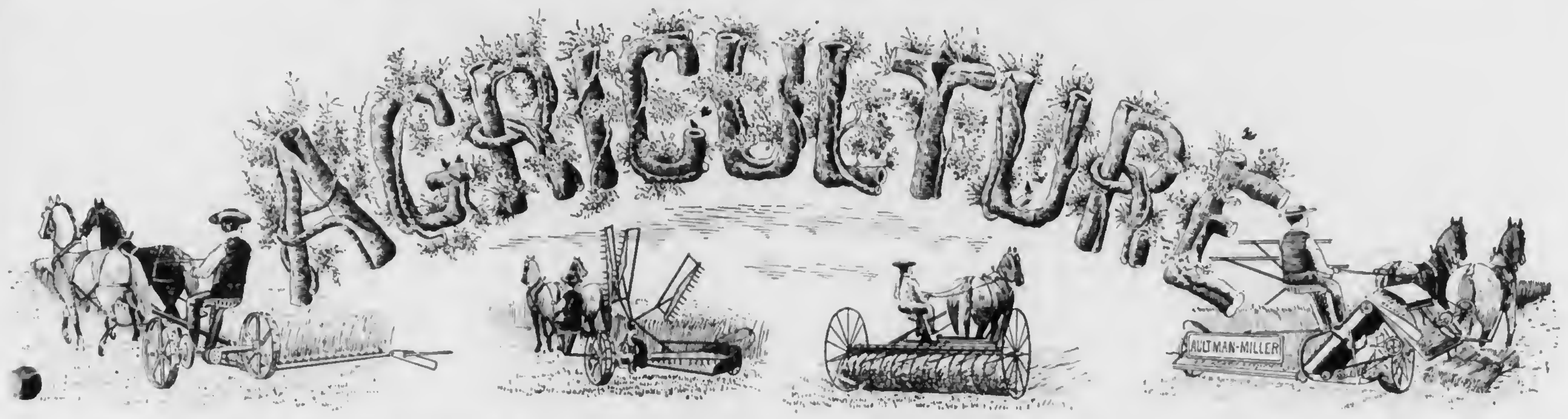
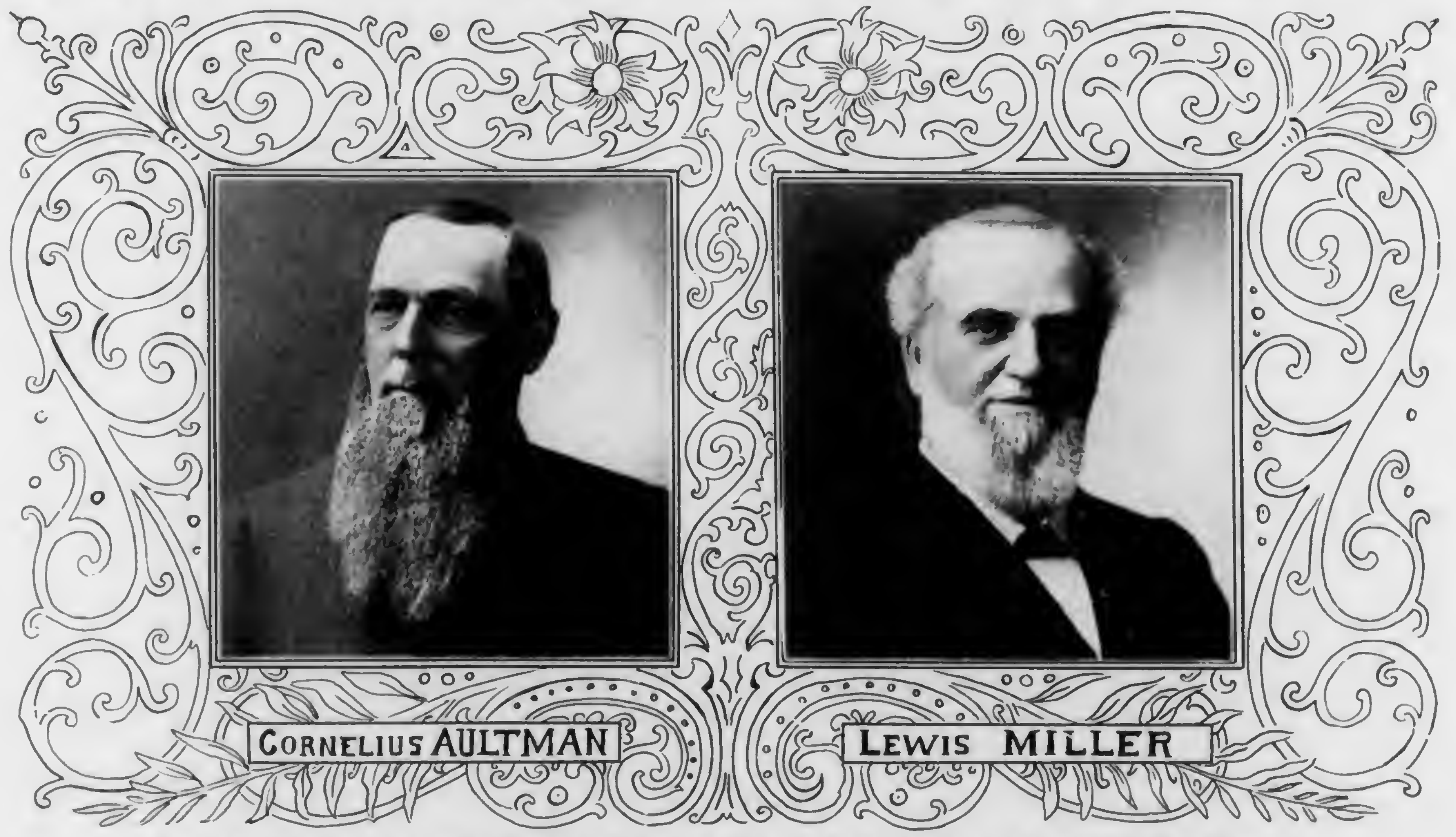
KING OF THE POTATO FIELD
In Use in Potato Districts all over the World.
A DIGGER THAT DIGS.
Most simple in construction, yet combining every essential principle to make a successful machine. Reasonable in price and within the reach of the smallest and poorest farmer. Full and complete description, with prices, will be sent free upon application.
H. W. DOUGHTEN, Moorestown, N. J., U. S. A.

R. HERSCHEL MANUFACTURING CO.,
B-19 Produce Exchange, New York, N. Y., U. S. A.
Manufacturers of
Mower Knives, Reaper Sickles, Sections, Guards, Knife Heads, Pitman Boxes, Rake Teeth, Section, Head and Guard Rivets, Link Chain Belting, and Attachment Links, and other Agricultural Implement Supplies.
FACTORY, PEORIA, ILL
Our 1901 Catalogue, No. 54, furnished free upon application.
BRANCHES: Kansas City, Mo. Minneapolis, Minn. Council Bluffs, Ia. New York, N. Y.



AGRICULTURE lies at the foundation of civilized well-being. Improved methods of sowing and reaping and bettered conditions of living always march hand in hand. Philanthropists assure us that mankind has had no greater benefactors than the creators of modern harvesting machines. Whosoever honestly and dispassionately seeks to know who those creators and inventors were will find the names of Aultman and Miller solidly imbedded in the foundations of the graceful arch that spans the field of modern Agriculture. They were the authors of the AULTMAN-MILLER BUCKEYE—denoting Harvesting Machines of the highest class produced by the hand of man.



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DIRECTORY FOR BUYERS.

The names of firms given below, together with the goods mentioned, are arranged for the convenience of buyers. These establishments are among the leading ones in the United States, are strictly reliable, have extensive facilities and are prompt in transacting business. They fully understand the export trade and carefully look after all foreign orders. The "Export Implement Age" is kept on file in their offices, and any mention of the journal will be an incentive to even greater promptness on their part in obliging you. Inquiries from foreign buyers desiring information relative to American agricultural machinery or implements addressed to them will be given careful and prompt attention. Write in any language you prefer.

BALING PRESSES (Hay, Straw, Etc.).

Acme Harvester Co., Pekin, Ill.	15
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Collins Plow Co., Quincy, Ill.	16
Dederick Agricultural and Machine Works	20
DeLoach Mill Manufacturing Co., Atlanta, Ga	6
Kansas City Hay Press Co., Kansas City, Mo.	39
Sandwich Manufacturing Co., Sandwich, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

BARBED WIRE.

American Steel and Wire Co., New York, N. Y.	25

BEET IMPLEMENTS (Planting, Cultivating and Harvesting).

American Harrow Co., Detroit, Mich	26
Baker & Hamilton, San Francisco, Cal.	21
Bateman Manufacturing Co., Grenloch, N. J.	35
Deere & Mansur Co., Moline, Ill.	14
Geneva Tool Co., Geneva, Ohio	13
Iowa Farming Tool Co., Ft. Madison, Iowa	22
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Sheble & Klemm, Frankford, Philadelphia, Pa.	22
Superior Drill Co., Springfield, Ohio	2
Withington & Cooley Mfg. Co., Jackson, Mich	35

BINDER TWINE.

Union Selling Co., New York, N. Y.	cover

BINDERS, SELF (Wheat, Rye, Oats, Etc.).

Acme Harvester Co., Pekin, Ill.	15
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Deering Harvester Co., Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y.	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y.	37
Plano Manufacturing Co., Chicago, Ill.	47
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	13

BRICK MACHINERY.

Martin Brick Machine Mfg. Co., The, Lancaster, Pa.	22

CARS (Steel Mine, Coal, Ore, Etc.)

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19

CHURNS.

Aspinwall Manufacturing Co., Jackson, Mich.	50

CIDER AND WINE PRESSES.

Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Lansing Wheelbarrow Co., Lansing, Mich.	19
Mast & Co., P. P., Springfield, Ohio	12
Superior Drill Co., Springfield, Ohio	2
Whitman Agricultural Co., St. Louis, Mo.	6

CLOTHES WASHING MACHINES.

Boss Washing Machine Co., Cincinnati, Ohio	9

CLOVER THRESHERS AND HULLERS.

Birdsell Manufacturing Co., South Bend, Ind.	12

COAL CARS.

Lansing Wheelbarrow Co., Lansing, Mich.	19

COAL SHUTES.

Lansing Wheelbarrow Co., Lansing, Mich.	19

COFFEE HULLERS.

Salem Iron Works, Salem, N. C.	39

CORN PLANTERS (Hand).

Aspinwall Manufacturing Co., Jackson, Mich.	50
Ohio Cultivator Co., Bellevue, Ohio	4
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Wiard Plow Co., Batavia, N. Y.	11

CORN PLANTERS (Horse).

American Harrow Co., Detroit, Mich	26
Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Case, J. I., Plow Works, Racine, Wis.	cover
Deere & Mansur Co., Moline, Ill.	14
Farquhar Co., The A. B., York, Pa.	57
Hench, Dromgold & Co., New York, N. Y.	16
Hoosier Drill Co., Richmond, Ind.	11
Keystone Farm Machine Co., Ltd., York, Pa.	3
McSherry Manufacturing Co., Middleton, Ohio	13
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17

CORN HARVESTERS.

Aultman, Miller & Co., Akron, Ohio	53
Deering Harvester Co., Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y.	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y.	37
Standard Harrow Co., Utica, N. Y.	7

CORN HUSKERS AND SHREDDERS.

Bradley, David, Manufacturing Co., Bradley, Ill	15
Deere & Mansur Co., Moline, Ill.	14
McCormick Harvesting Machine Co., Chicago., Ill.	40, 41
Ross, E. W. Co., The, Springfield, Ohio	6

CORN SHELLERS (Hand).

Baker & Hamilton, San Francisco, Cal.	21
Buch's Sons, A., Elizabethtown, Pa.	8
Challenge Wind Mill & Feed Mill Co., Batavia, Ill.	1
Deere & Mansur Co., Moline, Ill.	14
Goulds Manufacturing Co., The, Seneca Falls, N. Y.	19
Hench, Dromgold & Co., New York, N. Y.	16
Huntley Manufacturing Co., Silver Creek, N. Y.	21
Keystone Farm Machine Co., Ltd., York, Pa.	3
Marseilles Manufacturing Co., Marseilles, Ill.	10
Patch, A. H., Clarksville, Tenn.	20
Ross, E. W. Co., The, Springfield, Ohio	6
Sandwich Manufacturing Co., Sandwich, Ill.	13
Standard Harrow Co., Utica, N. Y.	7
Stover Manufacturing Co., Freeport, Ill.	18
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

CORN SHELLERS (Power).

Baker & Hamilton, San Francisco, Cal.	21
Deere and Mansur Co., Moline, Ill.	14
Marseilles Manufacturing Co., Marseilles, Ill.	10
Sandwich Manufacturing Co., Sandwich, Ill	13

CREAM SEPARATORS.

Sharples, P. M., West Chester, Pa.	cover
Vermont Farm Machine Co., Bellows Falls, Vt.	57

CULTIVATING MACHINERY (Hand and Garden).

Baker & Hamilton, San Francisco, Cal.	21
Bateman Manufacturing Co., Grenloch, N. J.	35
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buffalo Pitts Co., Buffalo, N. Y.	12
Deere & Co., Moline, Ill.	14
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Osborne, D. M. & Co., Auburn, N. Y.	37
Parlin & Orendorff, Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
Standard Harrow Co., Utica, N. Y.	7
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

CULTIVATING MACHINERY (Horse and Field).

American Harrow Co., Detroit, Mich.	26
Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco. Cal.	21
Bateman Manufacturing Co., Grenloch, N. J.	35
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buffalo Pitts Co., Buffalo, N. Y.	12
Case, J. I., Plow Works, Racine, Wis.	cover
Deere & Co., Moline, Ill.	14
Deere & Mansur Co., Moline, Ill.	14
Farquhar Co., The A. B., York, Pa.	57
Hench, Dromgold & Co., New York, N. Y.	16
Johnston Harvester Co., Batavia, N. Y.	51
Keystone Farm Machine Co., Ltd., York, Pa.	3
Mast & Co., P. P., Springfield, Ohio	12
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	14
Ohio Cultivator Co., Bellevue, Ohio	4
Osborne, D. M. & Co., Auburn, N. Y.	37
Parlin & Orendorff, Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
Standard Harrow Co., Utica, N. Y.	7

DAIRY APPARATUS.

Sharples, P. M., West Chester, Pa.	cover
Baker & Hamilton, San Francisco, Cal.	21
Vermont Farm Machine Co., Bellows Falls, Vt.	57

ENGINES AND BOILERS (Stationary).

Farquhar Co., The A. B., York, Pa.	57
Hench, Dromgold & Co., New York, N. Y.	16
Leffel, James & Co., Springfield, Ohio	35
Salem Iron Works, Salem, N. C.	39
Sharples, P. M., West Chester, Pa.	cover

ENGINES (Traction and Portable).

Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	24
Best Manufacturing Co., The, San Leandro, Cal.	48
Buffalo Pitts Co., Buffalo, N. Y.	12
Farquhar Co., The A. B., York, Pa.	57

FEED AND ENSILAGE CUTTERS.

Buch's Sons, A., Elizabethtown, Pa.	8
Challenge Wind Mill and Feed Mill Co., Batavia, Ill.	4
Ellis Keystone Agricultural Works, Pottstown, Pa.	3
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Marseilles Manufacturing Co., Marseilles, Ill	10
McSherry Manufacturing Co., Middleton, Ohio	13
Ross, E. W. Co., The, Springfield, Ohio	6
Silver Manufacturing Co., Salem, Ohio	5

FEED TROUGHS.

Buch's Sons, A., Elizabethtown, Pa.	8
Clizbe Bros. Manufacturing Co., Chicago, Ill.	23

FENCING (Woven Wire).

American Steel and Wire Co., New York, N. Y.	25
Keystone Woven Wire Fence Co., Peoria, Ill.	21

FERTILIZER DISTRIBUTERS.

Aspinwall Manufacturing Co., Jackson, Mich.	50
Hoosier Drill Co., Richmond, Ind.	11
Keystone Farm Machine Co., Ltd., York, Pa.	3

FRUIT DRYERS.

Vermont Farm Machine Co., Bellows Falls, Vt.	57

GARDENING TOOLS (Hand).

Bateman Manufacturing Co., Grenloch, N. J.	35
Ohio Cultivator Co., Bellevue, Ohio	4
Parlin & Orendorff, Canton, Ill.	17
Withington & Cooley Mfg. Co., Jackson, Mich	35

GAS ENGINES.

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19

GATES.

Keystone Woven Wire Fence Co., Peoria, Ill.	21

GRAIN DRILLS.

Baker & Hamilton, San Francisco, Cal.	21
Bickford & Huffman Co., Macedon, N. Y.	35
Crown Manufacturing Co., Phelps, N. Y.	cover
Empire Drill Co., Shortsville, N. Y.	11
Farquhar Co., The A. B., York, Pa.	35
Hench, Dromgold & Co., New York, N. Y.	16
Hoosier Drill Co., Richmond, Ind	11
McSherry Manufacturing Co., Middleton, Ohio.	13
Mast & Co., P. P., Springfield, Ohio	12
Superior Drill Co., Springfield, Ohio	2

GRAIN CLEANING MACHINERY (Rice, Coffee, Grain, Etc.).

Buch's Sons, A., Elizabethtown, Pa.	8
Grant-Ferris Co., Troy, N. Y.	21
Huntley Manufacturing Co., Silver Creek, N. Y.	21
Johnson & Field Manufacturing Co., Racine, Wis.	24
Michael, C. H., La Porte, Ind.	21
Salem Iron Works, Salem, N. C.	39

GRAIN GRINDING MILLS.

Baker & Hamilton, San Francisco, Cal.	21
Challenge Wind Mill and Feed Mill Co., Batavia, Ill.	4
DeLoach Mill Manufacturing Co., Atlanta, Ga	6
Flint & Walling Manufacturing Co., Kendallville, Ind.	18
Hench, Dromgold & Co., New York, N. Y.	[illegible]
Keystone Farm Machine Co., Ltd., York, Pa.	3
Litchfield Manufacturing Co., Webster City, Iowa	20
Marseilles Manufacturing Co., Marseilles, Ill.	10
Ross, E. W. Co., The, Springfield, Ohio	6
Sandwich Manufacturing Co., Sandwich, Ill.	13
Stover Manufacturing Co., Freeport, Ill.	18
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

HAND CARTS (Push).

Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deming Co., The, Salem, Ohio	cover
Goulds Manufacturing Co., Seneca Falls, N. Y.	9
Keystone Farm Machine Co., Ltd., York, Pa.	3
Lansing Wheelbarrow Co., Lansing, Mich.	9
Parlin & Orendorff Co., Canton, Ill.	17
Sandwich Manufacturing Co., Sandwich, Ill.	13
Whitman Agricultural Co., St. Louis, Mo.	6

(Continued on page 56.)

ADRIANCE

BUCKEYE

GRAND PRIX Highest Award Paris Exposition 1900

NO OTHER FIRM RECEIVED AT THE PARIS EXPOSITION FOR HARVESTING MACHINES (Class 35) HIGHER OR MORE AWARDS.

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DIRECTORY FOR BUYERS

(Continued from page 54).

HAND TOOLS (Shovels, Rakes, Hoes, Scythes, Forks, Etc.).

Geneva Tool Co., Geneva, Ohio	13
Harper, Smith & Sons, Philadelphia, Pa.	22
Iowa Farming Tool Co., Ft. Madison, Iowa	22
Jenkins Iron and Tool Co., Howard, Pa.	22
Rowland's Sons, T., Philadelphia, Pa.	22
Sheble & Klemm, Frankford, Philadelphia, Pa.	22
Utica Tool Co., Utica, N. Y.	22
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Withington & Cooley Mfg. Co., Jackson, Mich	35
Wyoming Shovel Works, Wyoming, Pa	22

HARROWS (Disc, Spring-Tooth and Spike-Tooth).

Adriance, Platt & Co., Poughkeepsie, N. Y.	55
American Harrow Co., Detroit, Mich.	26
Baker & Hamilton, San Francisco, Cal.	21
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buch's Sons, A., Elizabethtown, Pa.	8
Buffalo Pitts Co., Buffalo, N. Y.	12
Case, J. I., Plow Works, Racine, Wis.	cover
Collins Plow Co., Quincy, Ill.	16
Cutaway Harrow Co., Higganum, Conn.	58
Deere & Co., Moline, Ill.	14
Deere & Mansur Co., Moline, Ill.	14
Hench, Dromgold & Co., New York, N. Y.	16
Johnston Harvester Co., Batavia, N. Y.	51
Keystone Farm Machine Co., Ltd., York, Pa.	3
Lean Manufacturing Co., Roderick, Mansfield, Ohio	21
McSherry Manufacturing Co., Middleton, Ohio	13
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Osborne, D. M. & Co., Auburn, N. Y.	37
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill	17
South Bend Chilled Plow Co., South Bend, Ind.	20
Standard Harrow Co., Utica, N. Y.	7
Thomas Manufacturing Co., Springfield, Ohio	8
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Wiard Plow Co., Batavia, N. Y.	11

HATCHETS.

Jenkins Iron and Tool Co., Howard, Pa.	22

HAY TOOLS (For Handling Hay).

Myers, F. E. & Bro., Ashland, Ohio	2
Red Jacket Manufacturing Co., Davenport, Iowa	9
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Utica Tool Co., Utica, N. Y.	22
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

HAY LOADERS.

Deere & Mansur Co., Moline, Ill	14
Marseilles Manufacturing Co., Marseilles, Ill.	10
Rock Island Plow Co., Rock Island, Ill.	17
Sandwich Manufacturing Co., Sandwich, Ill.	13
Thomas Manufacturing Co., Springfield, Ohio	8

HAY RAKES.

Acme Harvester Co., Pekin, Ill.	45
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Buffalo Pitts Co., Buffalo, N. Y.	12
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deere & Mansur Co., Moline, Ill.	14
Deering Harvester Co., Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y.	51
Keystone Farm Machine Co., Ltd., York, Pa.	3
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Moline Plow Co., Moline, Ill.	39
Osborne, D. M. & Co., Auburn, N. Y.	37
Plano Manufacturing Co., Chicago, Ill.	47
Richardson Manufacturing Co., Worcester, Mass.	10
Thomas Manufacturing Co., Springfield, Ohio	8
Wiard Plow Co., Batavia, N. Y.	11
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43

HAY TEDDERS.

Johnston Harvester Co., Batavia, N. Y.	51
Osborne, D. M. & Co., Auburn, N. Y.	37
Richardson Manufacturing Co., Worcester, Mass	10
Thomas Manufacturing Co., Springfield, Ohio	8
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43

HODS (Steel and Wood).

Lansing Wheelbarrow Co., Lansing, Mich.	19

IMPLEMENT PARTS (Rake Teeth, Knife Sections, Etc.).

Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Baker & Hamilton, San Francisco, Cal	24
Herschell, R., Manufacturing Co., Peoria, Ill.	52
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

INSECT EXTERMINATORS.

Doughten, H. W., Moorestown, N. J.	52

LAWN MOWERS.

Clipper Lawn Mower Co., Norristown, Pa.	24
Thomas Manufacturing Co., Springfield, Ohio	8
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

MACHINE TOOLS.

Clizbe Bros. Manufacturing Co., Plymouth, Ind.	23
Silver Manufacturing Co., Salem, Ohio	5
Western Implement Co., Port Washington, Wis	23
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

MOWERS.

Acme Harvester Co., Pekin, Ill.	45
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Deering Harvester Co. Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y.	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y.	37
Plano Manufacturing Co., Chicago, Ill	47
Richardson Manufacturing Co., Worcester, Mass	10
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43

OIL ENGINES.

Best Mfg. Co., San Leandro, Cal.	48

PLOWS (Walking, Riding and Disc).

Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Case, J. I., Plow Works, Racine, Wis.	cover
Collins Plow Co., Quincy, Ill.	16
Deere & Co., Moline, Ill.	14
Hench, Dromgold & Co., New York, N. Y.	16
Moline Plow Co., Moline, Ill	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Ohio Cultivator Co., Bellevue, Ohio	4
Oliver Chilled Plow Works, South Bend, Ind.	26
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill	17
South Bend Chilled Plow Co., South Bend, Ind	20
Standard Harrow Co., Utica, N. Y.	7
Wiard Plow Co., Batavia, N. Y.	11
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

POTATO MACHINERY.

Aspinwall Manufacturing Co., Jackson, Mich.	50
Bateman Manufacturing Co., Grenloch, N. J.	35
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Deere & Mansur Co., Moline, Ill.	14
Doughten, H. W., Moorestown, N. J.	52
Hoover, Prout & Co., Avery O.	52
Moline Plow Co., Moline, Ill.	39
Parlin & Orendorff Co., Canton, Ill.	17
Rock Island Plow Co., Rock Island, Ill.	17
Standard Harrow Co., Utica, N. Y.	7

PUMPS, HAND AND POWER (Lift, Force and Spray).

Barnes Manufacturing Co., The, Mansfield, Ohio	9
Challenge Wind Mill & Feed Mill Co., Batavia, Ill.	4
Deming Co., The, Salem, Ohio	cover
McDonald, A. Y. & Morrison Mfg. Co., Dubuque, Ia.	57
Flint & Walling Manufacturing Co., Kendallville, Ind.	18
Goulds Manufacturing Co., The, Seneca Falls, N. Y.	9
Maud S., W. M. and Pump Co., Lansing, Mich.	39
Myers, F. E. & Bro., Ashland, Ohio	2
Red Jacket Manufacturing Co., Davenport, Iowa	9
Stover Manufacturing Co., Freeport, Ill.	18
Thomas Manufacturing Co., Springfield, Ohio	8
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Whitman & Barnes Manufacturing Co., Akron, Ohio	23

REAPERS.

Acme Harvester Co., Pekin, Ill.	45
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Aultman, Miller & Co., Akron, Ohio	53
Best Mfg. Co., San Leandro, Cal.	48
Deering Harvester Co., Chicago, Ill.	49
Johnston Harvester Co., Batavia, N. Y.	51
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y	37
Plano Manufacturing Co., Chicago, Ill.	47
Wood, Walter A., Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43

ROADMAKING MACHINERY.

Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19
Sidney Steel Scraper Co., Sidney, Ohio	19

ROCK AND ORE CRUSHING MACHINERY.

Martin Brick Mch. Mfg. Co., The, Lancaster, Pa.	22

ROLLERS (Field or Road).

Adriance, Platt & Co., Poughkeepsie, N. Y.	55
Bradley, David, Manufacturing Co., Bradley, Ill.	15
Bucher & Gibbs Plow Co., Canton, Ohio	2
Buch's Sons, A., Elizabethtown, Pa.	8
Hench, Dromgold & Co., New York, N. Y.	16
Johnson & Field Manufacturing Co., Racine, Wis.	24
Keystone Farm Machine Co., Ltd., York, Pa.	3
Lansing Wheelbarrow Co., Lansing, Mich	9
Lean Manufacturing Co., Roderick, Mansfield, Ohio	21
Martin Brick Mch. Mfg. Co., The, Lancaster, Pa.	22
Ohio Cultivator Co., Bellevue, Ohio	4
Standard Harrow Co., Utica, N. Y.	7

ROPE.

Union Selling Co., New York, N. Y.	cover

SEEDERS, BROADCAST (Grain and Grass).

American Harrow Co., Detroit, Mich.	26
Baker & Hamilton, San Francisco, Cal.	24
Crown Manufacturing Co., Phelps, N. Y.	cover
Deere & Mansur Co., Moline, Ill.	14
Goodell Co., Antrim, N. H.	12
Hench, Dromgold & Co., New York, N. Y.	16
Hoosier Drill Co., Richmond, Ind.	11
McSherry Manufacturing Co., Middleton, Ohio	13
Mast & Co., P. P., Springfield, Ohio	12
Superior Drill Co., Springfield, Ohio	2
Whitman Agricultural Co., St. Louis, Mo.	6

SHARPENERS AND GRINDERS.

Aultman, Miller & Co., Akron, Ohio	53
Clizbe Bros. Manufacturing Co., Chicago, Ill.	23
Deering Harvester Co., Chicago, Ill.	49
Hench, Dromgold & Co., New York, N. Y.	16
Luther Brothers, Milwaukee, Wis.	21
Plano Manufacturing Co., Chicago, Ill.	47
Western Implement Co., Port Washington, Wis.	23
Whitman & Barnes Manufacturing Co., Akron, Ohio	23
Whitman Agricultural Co., St. Louis, Mo.	6

SPRAYERS AND NOZZLES.

Aspinwall Manufacturing Co., Jackson, Mich.	50
Barnes Manufacturing Co., The, Mansfield, Ohio	19
Deming Co., The, Salem, Ohio	cover
Doughten, H. W., Moorestown, N. J.	52
Flint & Walling Mfg. Co., Kendallville, Ind.	18
Goulds Manufacturing Co., The, Seneca Falls, N. Y.	9
Myers, F. E. & Bro., Ashland, Ohio	2

STEAM BINDING AND HARVESTING MACHINERY.

Best Mfg. Co., San Leandro, Cal.	48

STEAM PLOWS.

Best Mfg. Co., San Leandro, Cal.	48

STEEL.

American Steel and Wire Co., New York, N. Y.	25

STRETCHERS (Fence).

Keystone Woven Wire Fence Co., Peoria, Ill.	21

SUGAR CULTIVATING IMPLEMENTS.

Ross, E. W. Co., The, Springfield, Ohio	6

THRESHING MACHINERY.

Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Best Mfg. Co., San Leandro, Cal.	48
Buffalo Pitts Co., Buffalo, N. Y.	12
Ellis Keystone Agricultural Works, Pottstown, Pa.	3
Grant-Ferris Co., Troy, N. Y.	24

TRACTION ENGINES (Freighting Outfits).

Best Mfg. Co., San Leandro, Cal.	48

TRANSPLANTERS.

McSherry Manufacturing Co., Middleton, Ohio	13

TREAD POWERS (Horse, Dog, Sheep, Etc.).

Challenge Wind Mill and Feed Mill Co., Batavia, Ill.	4
Ellis Keystone Agricultural Works, Pottstown, Pa	3
Ross, E. W. Co., The, Springfield, Ohio	6
Sandwich Manufacturing Co., Sandwich, Ill.	13
Vermont Farm Machine Co., Bellows Falls, Vt.	57
Whitman Agricultural Co., St. Louis, Mo.	6

TRUCKS (Hand Warehouse).

American Harrow Co., Detroit, Mich.	26
Buch's Sons, A., Elizabethtown, Pa.	8
Hench, Dromgold & Co., New York, N. Y.	16
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19
Lansing Wheelbarrow Co., Lansing, Mich.	19
Ohio Cultivator Co., Bellevue, Ohio	4
Sidney Steel Scraper Co., Sidney, Ohio	19
Whitman Agricultural Co., St. Louis, Mo.	6

TWINE (for Self-binding Harvesters).

Adriance, Platt & Co., Poughkeepsie, N. Y	55
Deering Harvester Co., Chicago, Ill	49
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
Osborne, D. M. & Co., Auburn, N. Y.	37
Union Selling Co., New York, N. Y.	cover

WAGONS AND CARTS (Farm).

Avery Manufacturing Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	21
Birdsell Manufacturing Co., South Bend, Ind.	12
Fish Bros. Wagon Co., Racine, Wis.	7
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19
Lansing Wheelbarrow Co., Lansing, Mich.	19

WEEDERS.

Acme Harvester Co., Pekin, Ill.	45
Aspinwall Manufacturing Co., Jackson, Mich.	50
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Standard Harrow Co., Utica, N. Y.	7
Wiard Plow Co., Batavia, N. Y.	11

WELL TOOLS AND DRILLING MACHINERY.

Flint & Walling Mfg. Co., Kendallville, Ind.	18
Star Drilling Machine Co., Akron, Ohio	4

WHEELBARROWS.

Buch's Sons, A., Elizabethtown, Pa.	8
Hench, Dromgold & Co., New York, N. Y.	16
Keystone Farm Machine Co., Ltd., York, Pa.	3
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19
Lansing Wheelbarrow Co., Lansing, Mich.	19
Martin Brick Mch. Mfg. Co., The, Lancaster, Pa.	22
Sidney Steel Scraper Co., Sidney, Ohio	19
Whitman Agricultural Co., St. Louis, Mo.	6
Withington & Cooley Mfg. Co., Jackson, Mich.	35

WIND MILLS (Towers and Tanks).

Challenge Wind Mill & Feed Mill Co., Batavia, Ill.	4
Flint & Walling Mfg. Co., Kendallville, Ind.	18
Marseilles Manufacturing Co., Marseilles, Ill.	10
Maud S., W. M. and Pump Co., Lansing Mich.	39
Stover Manufacturing Co., Freeport, Ill.	18
U. S. Wind Engine and Pump Co., Batavia, Ill	13

WIRE.

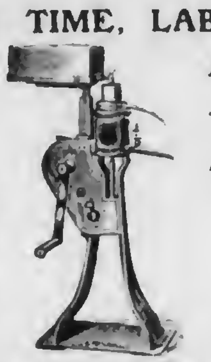
American Steel and Wire Co., New York, N. Y.	25

WIRE NAILS.

American Steel and Wire Co., New York, N. Y.	25

WOOD SAWING MACHINERY.

Buch's Sons, A., Elizabethtown, Pa.	8
Challenge Wind Mill Co., Batavia, Ill.	4
DeLoach Mill Manufacturing Co., Atlanta, Ga.	6
Ellis Keystone Agricultural Works, Pottstown, Pa.	3
Farquhar Co., The A. B., York, Pa.	57
Hench, Dromgold & Co., New York, N. Y.	16
Marseilles Manufacturing Co., Marseilles, Ill.	10
Ross, E. W. Co., The, Springfield, Ohio	6
Salem Iron Works, Salem, N. C.	39
Sandwich Manufacturing Co., Sandwich, Ill.	13
U. S. Wind Engine and Pump Co., Batavia, Ill.	13



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SAVES ITS USERS TIME, LABOR AND MONEY.

Saves Time and Labor
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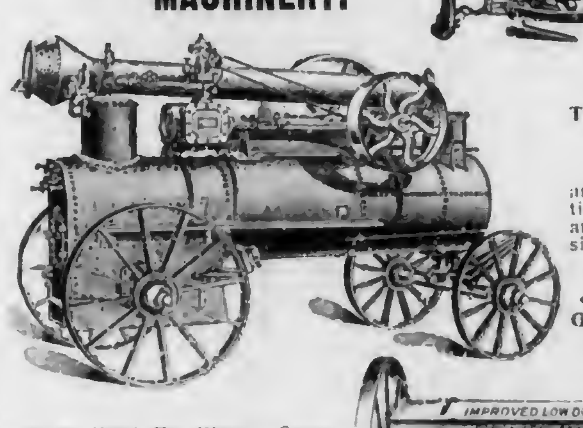

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Made in all the leading styles and sizes.
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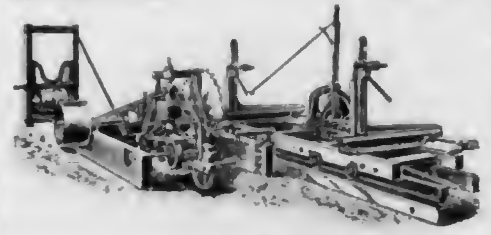

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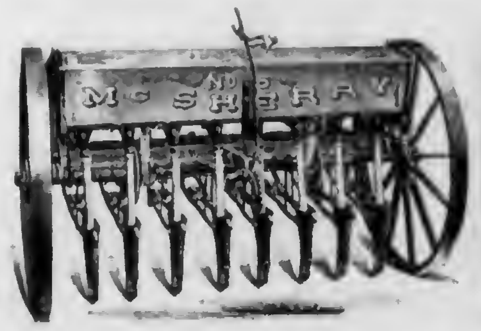

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BROADCAST SEEDERS
TRANSPLANTERS
DISC HARROWS ETC.
GRAIN DRILLS
Middletown, Ohio.

SCIENTIFIC PROGRESS IN FARMING.

The eyes of progressive cultivators of the world over have their eyes on the United States, where they naturally and instinctively look for scientific progress through which greater results will be reached with less effort. In this connection our friends abroad will note with interest what the American Secretary of Agriculture says as to what progressive steps are being taken in the United States. The Secretary says:

"Nature's secrets are being uncovered all along the line. This department has sixteen scientific divisions studying conditions which will tend to benefit the cultivators of the soil. More than 2000 persons connected with scientific research in this single department are pushing work in their special lines, the results of which will be laid before farmers everywhere.

"More than fifty agricultural colleges and experiment stations are at work in the several states studying conditions relating to agriculture in all its branches. Something is being done with regard to the study of the soil, the plant, the animal, the movement of moisture in the soil, the potential of plants, the possibilities of animal development."

PACIFIC MAIL COMPANY.

Our merchant readers in Mexico, Central and South America ought not to lose sight of the fact that the Pacific Mail Company has established facilities which make it independent of the Panama Railroad, so far as its business between Central American, Mexican Pacific ports and New York, by way of San Francisco, is concerned. It is completing extensive wharf facilities at Guaymas, and will then send part of its freight by way of that port and the Sunset route. The Panama Railroad Company is making giant efforts to extend its business in Central America and Mexico. It has secured the co-operation of the Pacific Steam and the Chilian Navigation Companies, and has arranged for a joint service between Valparaiso, Panama and Ocos. Each company sends a vessel to Ocos, the most northern port of Guatemala, every two weeks. In consideration of calling at Mexican ports the Mexican Government has agreed to give the two lines a joint subsidy of $20,000 a year, which is further strengthened by subsidies by several Central American states. With these greatly increased facilities the business interests of that part of the Western hemisphere ought to and doubtless will be greatly benefited.

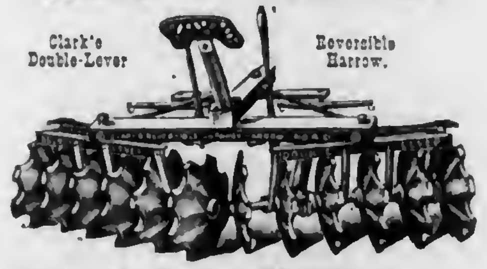
ASIATIC EXPORT BUREAU.

Vice-Counsul-General Hanauer, of Frankfort, under date of November 18, 1900, sends the following: "On the 1st of January next, a Russian-Asiatic export bureau will be opened at St. Petersburg. Its aim is to facilitate trade with the Far East. This bureau has a capital of 2,000,000 rubles ($1,010,000) and will have branch offices in Warsaw, Moscow, Odessa, Vladivostok, Chabarofsk and Tschita."

Should the suggestion made by some of our English agricultural implement dealers to establish an agricultural implement dealers' association for the whole kingdom be carried into execution it is probable that a good many points of friction would be removed. The parent Association at Manchester does not command the fullest confidence of some of the lesser associations, and hence the suggestion of a central association of national scope. The objective point of agitation at present seems to be the suppression of the "agent" who keeps no stock and, being free from office expenses undersells those who have a store and stock.

WANTED.—A German, thorough commercial man, of long traveling experience in South American countries, and who speaks Spanish, French and English fluently, wishes engagement with an export house or manufacturer as traveler or all-round man. Address "Germania," care EXPORT IMPLEMENT AGE.

CUTAWAY HARROW CO.,
Higganum, Conn., U. S. A.



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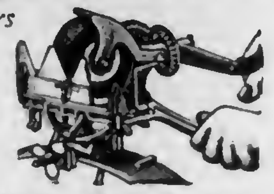
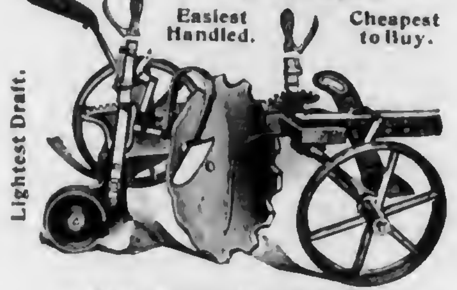
DUTTON MOWER KNIFE GRINDER,
CLARK'S SULKY DISK PLOW.

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ALPHABETICAL LIST OF ADVERTISERS.

Acme Harvester Co., Pekin, Ill.	45
Adriance, Platt & Co., Poughkeepsie, N. Y.	55
American Harrow Co., Detroit, Mich.	26
American Steel and Wire Co., Chicago, Ill., and New York, N. Y.	25
Aspinwall Mfg. Co., Jackson, Mich.	50
Aubeck, P., New York City, N. Y.	39
Aultman, Miller & Co., Akron, Ohio	53
Avery Mfg. Co., Peoria, Ill.	5
Baker & Hamilton, San Francisco, Cal.	24
Barnes Mfg. Co., The, Mansfield, Ohio	9
Bateman Mfg. Co., Grenloch, N. J.	35
Best Mfg. Co., The, San Leandro, Cal.	48
Bettendorf Metal Wheel Co., Springfield, Ohio	4th cover
Bickford & Hoffman Co., Macedon, N. Y.	35
Birdsell Mfg. Co., South Bend, Ind.	12
Boss Washing Machine Co., Cincinnati, Ohio	5
Bradley Mfg. Co., David, Bradley, Ill.	15
Bucher & Gibbs Plow Co., The, Canton, Ohio	2
Buch's Sons, A., Elizabethtown, Pa	8
Buffalo Pitts Co., Buffalo, N. Y.	12
Case Plow Works, J. I., Racine, Wis.	3d cover
Challenge Wind Mill and Feed Mill Co., Batavia, Ill.	4
Clipper Lawn Mower Co., The, Norristown, Pa.	24
Clizbe Bros. Mfg. Co., Chicago, Ill.	23
Collins Plow Co., Quincy, Ill.	16
Crown Mfg. Co., Phelps, N. Y.	3d cover
Cutaway Harrow Co., Higganum, Conn	58
Dederick's Sons, P. K., Albany, N. Y.	20
Deere & Co., Moline, Ill.	14
Deere & Mansur Co., Moline, Ill.	14
Deering Harvester Co., Chicago, Ill.	49
DeLoach Mill Mfg. Co., Atlanta, Ga.	6
Deming Co., The, Salem, Ohio	3d cover
Doughten, H. W., Moorestown, N. J.	52
Ellis Keystone Agr'l Works, Pottstown, Pa.	3
Empire Drill Co., Shortsville, N. Y.	11
Farquhar Co., The A. B., York, Pa.	57
Fish Bros. Wagon Co., Racine, Wis.	7
Flint & Walling Mfg. Co., Kendallville, Ind.	18
Geneva Tool Co., Geneva, Ohio	13
Goodell Co., The, Antrim, N. H.	12
Goulds Mfg. Co., Seneca Falls, N. Y.	9
Grant-Ferris Co., Troy, N. Y.	24
Harper, Smith & Sons, Philadelphia, Pa.	22
Hench, Dromgold & Co., York, Pa.	16
Herschel Mfg. Co., R., Peoria, Ill.	52
Hoosier Drill Co., Richmond, Ind.	11
Hoover, Prout & Co., Avery, Ohio	52
Huntley Mfg. Co., Silver Creek, N. Y.	24
Iowa Farming Tool Co., The, Ft. Madison, Iowa	22
Jenkins Iron and Tool Co., Howard, Pa.	22
Johnson & Field Mfg. Co., Racine Wis.	24
Johnston Harvester Co., Batavia, N. Y.	51
Kansas City Hay Press Co., Kansas City, Mo.	39
Keystone Farm Machine Co., York, Pa.	3
Keystone Woven Wire Fence Co., Peoria, Ill.	21
Kilbourne & Jacobs Mfg. Co., Columbus, Ohio	19
Lansing Wheelbarrow Co., Lansing, Mich.	19
Lean Mfg. Co., Roderick, Mansfield, Ohio	21
Leffel & Co., James, Springfield, Ohio	35
Lieber Code Co., New York City, N. Y.	20
Litchfield Mfg. Co., Webster City, Iowa	20
Luther Brothers, Milwaukee, Wis.	21
Marseilles Mfg. Co., Marseilles, Ill.	10
Martin Brick Mfg. Co., The, Lancaster, Pa.	22
Mast, P. P., & Co., Springfield, Ohio	12
Maud S. W. M. and Pump Co., Lansing, Mich.	39
McCormick Harvesting Machine Co., Chicago, Ill.	40, 41
McDonald, A. Y., & Morrison Mfg. Co., Dubuque, Ia.	57
McSherry Mfg. Co., The, Middletown, Ohio	13
Michael, C. H., LaPorte, Ind.	24
Moline Plow Co., Moline, Ill.	39
Morrison Mfg. Co., Fort Madison, Iowa	13
Myers & Bro., F. E., Ashland, Ohio	2
Ohio Cultivator Co., Bellevue, Ohio	4
Oliver Chilled Plow Works, South Bend, Ind.	26
Osborne & Co., D. M., Auburn, N. Y.	37
Parlin & Orendorff Co., Canton, Ill.	17
Patch, A. H., Clarksville, Tenn.	20
Plano Mfg. Co., The, Chicago, Ill.	47
Red Jacket Mfg. Co., Davenport, Iowa	9
Richardson Mfg. Co., The, Worcester, Mass.	10
Rock Island Plow Co., Rock Island, Ill.	17
Ross Co., E. W., Springfield, Ohio	6
Rowland's Sons, T., Cheltenham, Pa.	22
Salem Iron Works, Salem, N. C.	39
Sandwich Mfg. Co., Sandwich, Ill.	13
Sharples, P. M., West Chester, Pa.	4th cover
Sheble & Klemm, Frankford, Phila., Pa.	22
Sidney Steel Scraper Co., Sidney, Ohio.	19
Silver Manufacturing Co., The, Salem, Ohio	5
South Bend Chilled Plow Works, South Bend, Ind.	20
Standard Harrow Co., Utica, N. Y., The	7
Star Drilling Machine Co., Akron, Ohio	4
Stover Mfg. Co., Freeport, Ill.	18
Superior Drill Co., The, Springfield, Ohio	2
Thomas Mfg. Co., The, Springfield, Ohio	8
Union Selling Co., The, New York City, N. Y.	4th cover
U. S. Wind Engine and Pump Co., Batavia, Ill.	13
Utica Tool Co., Utica, N. Y.	22
Vermont Farm Machine Co., Bellows Falls, Vt.	57
Walter A. Wood Mowing and Reaping Machine Co., Hoosick Falls, N. Y.	43
Western Implement Co., Port Washington, Wis.	23
Whitman Agricultural Co., St. Louis, Mo.	6
Whitman & Barnes Mfg. Co., Akron, Ohio.	23
Wiard Plow Co., Batavia, N. Y.	11
Withington & Cooley Mfg. Co., Jackson, Mich.	35
Wyoming Shovel Works, Wyoming, Pa.	22

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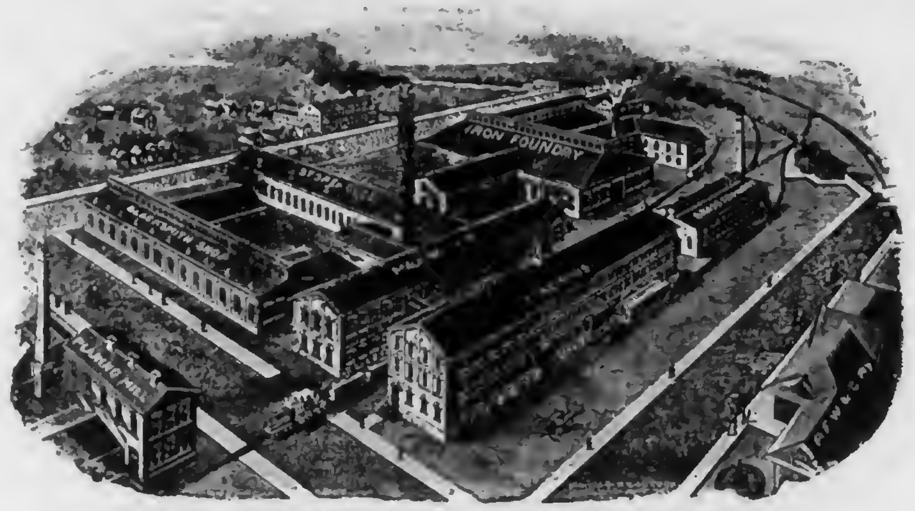

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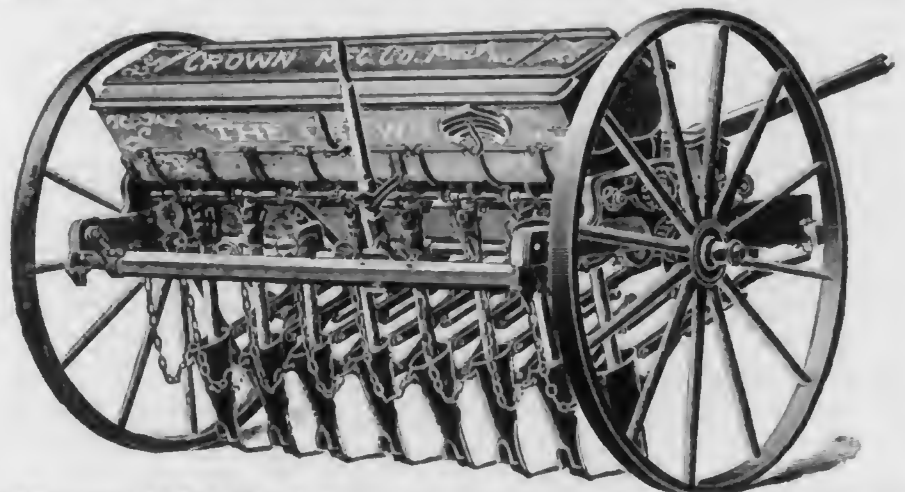
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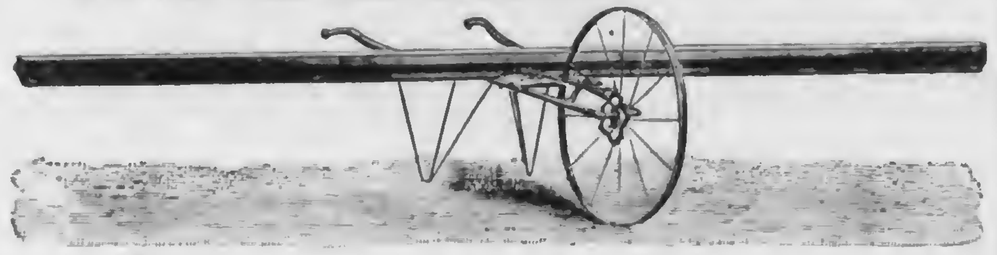

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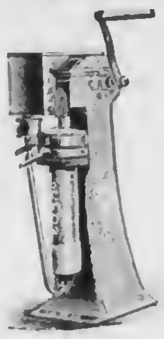

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No. 6 Tubular Hand	300 "
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No. 6 Tubular Steam Driven	300 "
No. 9 Tubular Steam Driven	400 "

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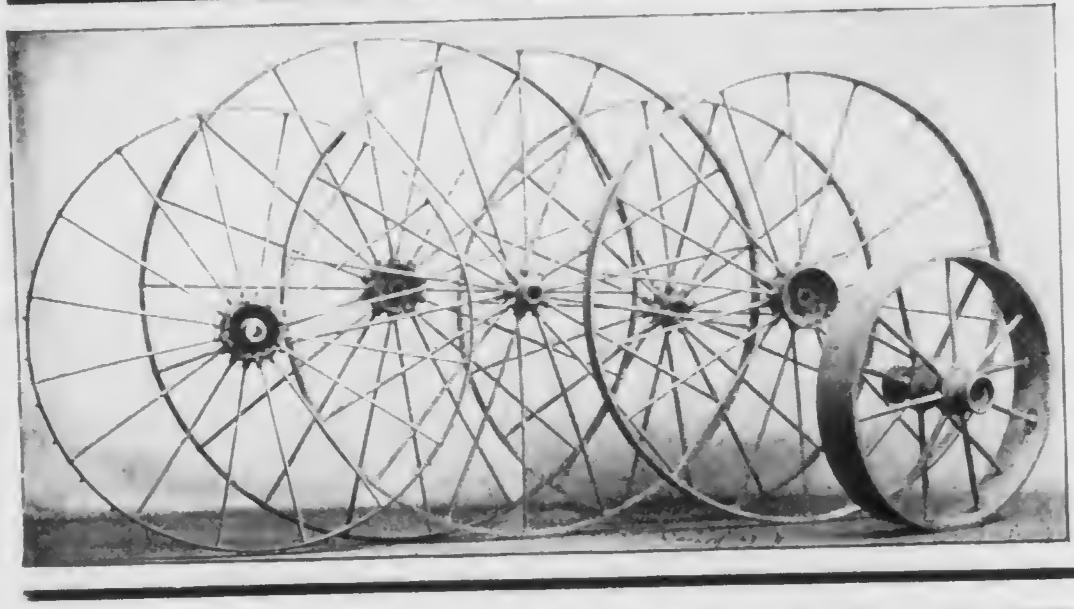
Imperial Steam Driven	975 "
Standard Belt	650 "
Imperial Belt	975 "
No. 25 Tubular Steam Driven	1,120 "
No. 32 Tubular Steam Driven	1,430 "
No. 45 Tubular Steam Driven	2,010 "
No. 60 Tubular Steam Driven	2,690 "



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